

TECHNICAL MANUAL

ARMY AMMUNITION DATA SHEETS

FOR

LAND MINES

(FSC 1345)

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HEADQUARTERS, DEPARTMENT OF THE ARMY

1 SEPTEMBER 1994

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FOR
LAND MINES (FSC 1345)

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(LAND MINES (FSC 1345))

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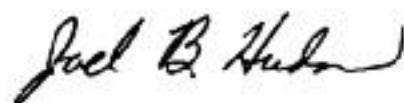
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ARMY AMMUNITION DATA SHEETS (LAND MINES (FSC 1345))

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. You may mail, e-mail, or FAX your response. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 located in the back of this manual direct to: Commander, U.S. Army TACOM, Armament Research, Development and Engineering Center, ATTN: AMSTA-AR-WEL, Picatinny Arsenal, NJ 07806-5000. E-mail address is LSS@PICA.ARMY.MIL. FAX number is Commercial (201) 724-4633, DSN 880-4633. A reply will be furnished to you.

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*This manual supersedes TM 43-0001-36, 14 February 1977, including all changes.

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CHAPTER 1 INTRODUCTION

1-1. Purpose

This manual is a reference handbook published as an aid in training, familiarization, and identification of land mines and mine fuzes. This manual is not authorization for requisition, stockage, maintenance, or issue of the materiel described herein.

1-2. Scope

a. For each item of materiel, there are illustrations and descriptions together with characteristics and related data. Included in the related data are weights, dimensions, performance data, packing, shipping and storage data, type classification, and logistics control codes (LCC).

b. Information concerning supply, operation, and maintenance of the items will be found in the publications referenced for those items. A complete listing of these publications is maintained in DA Pam 310 series indexes.

c. Within this manual, items with the following type-classifications are included:

- (1) Standard (LCC-A, LCC-B).
- (2) Contingency (CON).
- (3) Limited procurement (LP).

(4) Reclassified obsolete (OBS) for regular Army use, but used by National Guard or Reserve units.

(5) Reclassified OBS for all Army use, but used by Marine Corps, Air Force or Navy.

(6) Reclassified OBS, no users, but US stocks remain. Items with the following type-classification are not included: Reclassified OBS for all U.S. use. No U.S. stocks remain. (Foreign use or stock may remain).

d. Numerical values, such as weights, dimensions, candlepower, etc., are nominal values, except when specified as maximum or minimum. Actual items may vary slightly from these values. Allowable limits can be obtained from the drawings indicated in the data sheets.

1-3. Metric Conversion Chart

For approximate conversions to/from metric measures see Table 1-1.

1-4. Key to Abbreviations and Symbols

| | |
|--------|---------------------------------------|
| AD | Anti-disturbance |
| AP | Armor piercing |
| APERS | Antipersonnel |
| AT/AV | Antitank/antivehicle |
| CON | Contingency |
| DCP | Dispenser control panel |
| E-CELL | Electrochemical cell |
| Frag | Fragmentation |
| HE | High-explosive |
| LCC | Logistics control codes |
| LP | Limited procurement |
| LVD | Low voltage detector |
| NM | Nonmetallic |
| OBS | Obsolete |
| SD | Self-destruct |
| VX | Persistent toxic (casualty) nerve gas |

1-5. Quantity-Distance Classes and Storage Compatibility Groups

Quantity-Distance Classes and Storage Compatibility Groups. Quantity-Distance (QD) classes and Storage Compatibility groups (SCC) listed in this manual are changed. For conversion to new system see Table 1-2.

Table 1-1. Metric Conversion Chart

| Approximate Conversions to Metric Measures | | | | |
|--|-------------------------------------|-------------|----------------|-----------------|
| Symbol | When You Know | Multiply By | To Find | Symbol |
| LENGTH | | | | |
| in. | inches | 2.5 | centimeters | cm |
| ft | feet | 30 | centimeters | cm |
| yd | yards | 0.9 | meters | in. |
| mi | miles | 1.6 | kilometers | km |
| AREA | | | | |
| in. ² | square inches | 6.5 | sq centimeters | cm ² |
| ft ² | square feet | 0.009 | sq meters | m ² |
| yd ² | square yards | 0.8 | sq meters | m ² |
| mi ² | sq miles | 2.6 | sq kilometers | km ² |
| | acres | 0.4 | hectares | ha |
| WEIGHT | | | | |
| oz | ounces | 28 | grams | g |
| lb | pounds | 0.45 | kilograms | kg |
| | short tons (2000 lb) | 0.9 | tonnes | t |
| VOLUME | | | | |
| tap | teaspoons | 5 | milliliters | ml |
| Tbsp | tablespoon | 15 | milliliters | ml |
| fl oz | fluid ounces | 30 | milliliters | ml |
| c | cups | 0.24 | liters | 1 |
| pt | pints | 0.47 | liters | 1 |
| qt | quarts | 0.95 | liters | 1 |
| gal | gallons | 3.8 | liters | 1 |
| ft ³ | cubic feet | 0.03 | cubic meters | m ³ |
| yd ³ | cubic yards | 0.76 | cubic meters | m ³ |
| TEMPERATURE | | | | |
| Symbol | When You Know | Subtract | Multiply | To Find |
| °F | Fahrenheit | 32 | by 0.55 | Celcius ° C |
| Approximate Conversions from Metric Measures | | | | |
| LENGTH | | | | |
| mm | millimeter | 0.04 | inches | in. |
| cm | centimeters | 0.4 | inches | in. |
| m | meters | 3.3 | feet | ft |
| m | meters | 1.1 | yards | yd |
| km | kilometers | 0.6 | miles | mi |
| AREA | | | | |
| cm ² | square centi- meters | 0.16 | square inches | in ² |
| m ² | square meters | 1.2 | square yards | yd ² |
| km ² | square kilo- meters | 0.4 | square miles | mi ² |
| ha | hectares (10,000m ²) | 2.5 | acres | |

| WEIGHT | | | | | |
|-------------|---------------|----------|--------------|-----------------|--------|
| g | grams | 0.035 | ounces | | |
| oz | oz | | | | |
| kg | kilograms | 2.2 | pounds | | |
| lb | lb | | | | |
| t | tonnes | 1.1 | short tons | | |
| VOLUME | | | | | |
| ml | milliliters | 0.03 | fluid ounces | fL oz | |
| 1 | liters | 2.1 | pints | | |
| pt | pt | | | | |
| 1 | liters | 1.06 | quarts | | |
| qt | qt | | | | |
| 1 | liters | 0.26 | gallons | | |
| gal | gal | | | | |
| ms | cubic meters | 35 | cubic feet | ft | |
| ma | cubic meters | 1.3 | cubic yards | yd ³ | |
| TEMPERATURE | | | | | |
| Symbol | When You Know | Multiply | Add | To Find | Symbol |
| °C | Celcius | by 1.8 | 32 | Fahrenheit | F |

Table 1-2. Quantity-Distance Classes and Storage Compatibility Groups

| Quantity-distance hazard class ^{1/} | Storage compatibility group ^{1/3/} |
|--|---|
| Old | New v |
| 8 | 6.1 |
| 7 | 1.1 |
| 6 | 1.2 (18) |
| 5 | 1.2 (12) |
| 4 | 1.2 (08) |
| 3 | 1.2 (04) |
| 2 | 1.3 |
| 1 | 1.4 |

Notes:

^{1/} New QD and SCG's are compatible with classes used by NATO nations.

^{2/} Numbers in parenthesis are minimum distance x 100 feet to protect against specific fragment hazards and vary with items and types of ammunition. (Refer to TM 9-1300-206.)

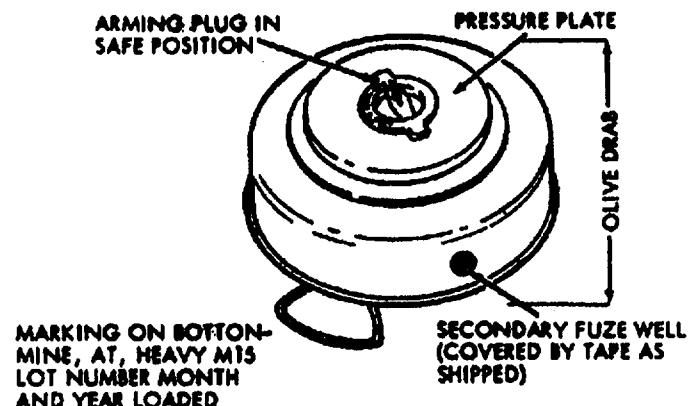
^{3/} There is no simple conversion from old SCG's to new system. The SCG groups listed in this column are typical for the majority of items in the corresponding listed QD class but do not apply to every individual item in the class. For SCG of individual items refer to TM 9-1300-206.

CHAPTER 2

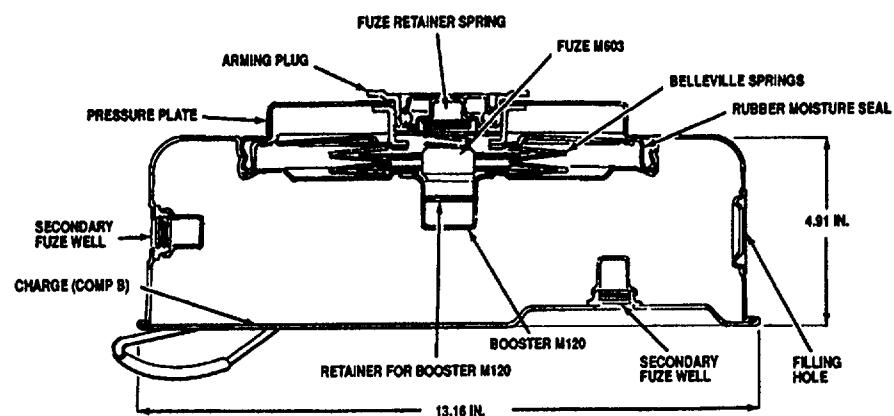
**ANTITANK MINES AND AERIALLY DISPERSED
ANTITANK/ANTIVEHICLE MINES**

Section I. MINES, ANTITANK

MINE, ANTITANK: HE, HEAVY, M15



AR102193

U
AR 102194**Type Classification:**

S 37119 (LCC-A)

Use:

Antitank mine M15 is intended for use against heavy tanks and other types of heavy tracked and wheeled vehicles.

Description:

The mine is a flat, steel cylinder with the fuze and most of the other components located concentrically with the vertical axis. Two secondary fusing wells, threaded to accept M1 activators, are located, one in the side and one in the bottom, to provide for alternate fusing and booby trapping arrangements. The mine, as shipped, has these wells covered with tape. The recessed knob in the M4 arming plug, located top, center, carries an arrow, and may be set to indicate Safe, Danger, or Armed, as indicated on the rim of the plug. A carrying handle, attached to the underside of the mine, is provided. The mine body houses the arming plug, pressure plate, multiple element belleville

spring primary fuze, M120 booster, and main explosive charge. The mine is shipped with fuze not assembled, with the fuze packed separately in a metal can in the packing box. Arming of the mine requires the use of the M20 wrench, with which the arming plug is unscrewed, permitting insertion of the fuze. Following removal of the safety for the fuze is inserted in the well. After verifying that the setting knob and shutter are in the Safe position, the arming plug is screwed into place and wrench tight. The mine is armed by rotating the setting knob to the Armed position with the M20 wrench.

Functioning:

When the shutter of the arming plug is in the Armed position, a force of 350 to 750 pounds on the pressure plate of the mine will allow the load to be transferred to the fuze. This force activates the fuze mechanism, driving the firing pin into the detonator. This initiates the M120 booster in the bottom of the fuze well, which, in turn, detonates the main charge.

Tabulated Data:

Model numberM15
 TypeAT-Heavy
 Drawings:
 Assembly.....82-0-189
 Weight - fuzed31.46 lb
 Dimensions:
 Height.....4.91 in.
 Max diameter13.25 in.
 Material Steel

Threads:
 Arming plug well.....2.313-14NS-1A
 Secondary fuze well0.75-12NS

Fuze (see separate
 write-up)M603

Temperature Limits:

Firing - lower-40°F
 - upper.....+125°F

Storage lower-60°F
 - upper.....+ 160°F

Shipping and Storage Data:

Packing arrangement1 mine w/fuze, 1 activ in
 can, & 1 wrench, all in
 wooden box

Weight.....49 lb

Dimensions18 x 15-1/8 x 7-1/2 in.

Cube1.17 cu ft

Hazard class/division and
 storage compatibility

group1.1D
 UNO serial number- 0137
 UNO proper shipping
 nameMines
 DOT shipping class - Class A Explosive
 IDOT markingEXPLOSIVE MINES
 DODAC1345-K180
 PaintingOlive Drab
 MarkingYellow

Explosive Data:

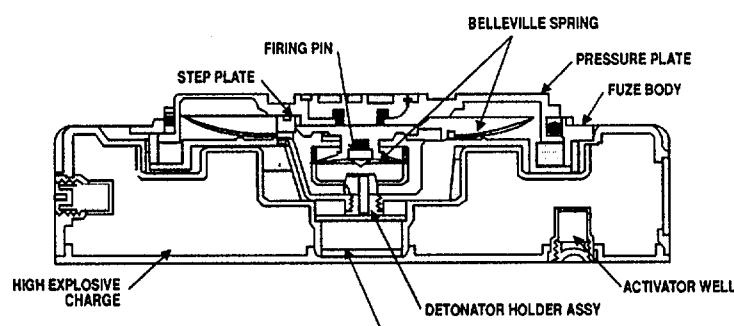
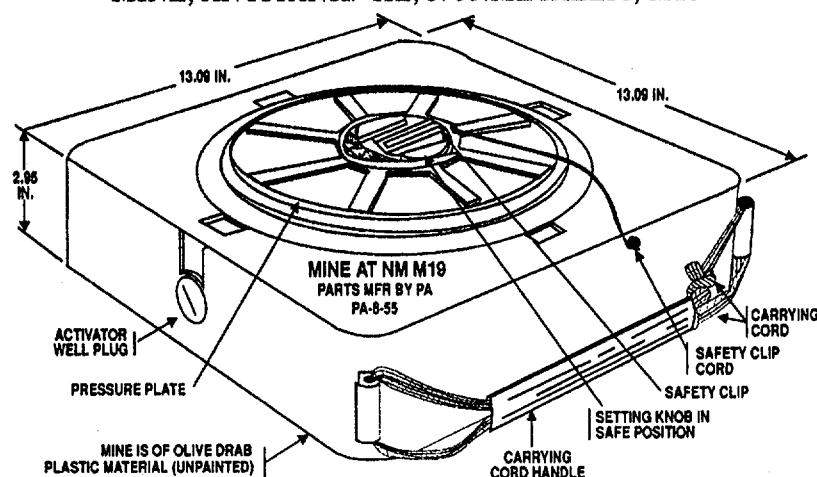
| Item | Type | Weight | |
|--------------|-----------|----------|----------|
| | | AV | Metric |
| M603 Fuze - | | | |
| M45 Det | PA #100 | 1.85 gr | 120 mg |
| Lead Az | 4.24 gr | 272 mg | |
| RDX | 1.85 gr | 120 mg | |
| M120 Boost | RDX | 172.5 gr | 11.18 gm |
| M15 Mine - | | | |
| Main chg | Comp B | 22.75 lb | 10.33 kg |
| M1 Activator | (if used) | | |
| M31 Det | Ar Ign Mx | 2.3 gr | 150 mg |
| Lead Az | 3.9 gr | 250 mg | |
| Tetryl | 4.2 gr | 270 mg | |
| Booster | Tetryl | 36 gr | 2.3 gm |

Reference:

TM 9-1345-203-12&P

MINE, ANTITANK: HE, NONMETALLIC, M19

MINE, ANTITANK: HE, NONMETALLIC, M19

**Type Classification:**

S 37119 (LCC-A)

Use:

Antitank mine M19 is used against heavy tanks and heavy tracked and wheeled vehicles. The M19 mine is of nearly all-plastic construction and is nondetectable by magnetic mine detectors. The mine uses the mechanical pressure type fuze M606, also constructed of plastic material.

Description:

The mine has a square case of olive drab plastic material with both embossed and yellow markings. It can be easily identified in the dark by its box shape. The mine is packed assembled with the M606 fuze, less the detonator holder, loading assembly, which is packed separately in the same box. Two letters, A and S, on the pressure plate signify Armed and Safe, respectively. The mine body holds the high-explosive charge, the tetryl or RDX booster pellet, and the M606 fuze. There is a well, threaded to accept an M2 activator for booby

trapping in the side of the mine and another one in the bottom. In mines of early manufacture these wells are closed with plugs and gaskets, while in those of later manufacture the wells are closed with strips of adhesive tape. The fuze body contains the pressure plate, two belleville springs, setting knob, step plate firing pin assembly, and detonator. The upper belleville spring allows the fuze to function with application of predetermined force. The lower belleville spring drives the firing pin into the detonator when the pressure plate is forced downward. The setting knob turns the step plate from the Safe to Armed position and the safety clip locks the setting knob in the Safe position.

Functioning:

With safety clip removed and setting knob set on A, a force of 300 to 500 pounds applied to the pressure plate causes the lower belleville spring to drive the firing pin into the detonator, thus initiating the booster pellet and setting off the main charge.

Tabulated Data:

Model numberM19
 TypeAT, Non-Metallic
 Drawings:
 Assembly.....9209328
 Weight 27.68 lb
 Dimensions:
 Height s/M606 fuze.....3.7 in.
 Max width (square)13.09 in.
 MaterialPlastic

Threads:

Fuze detonator holder
 well.....0.563-12UNC-1A
 Secondary fuze well0.75-UNS-18
 Fuze (see separate
 write-up)M606

Temperature Limits:

Firing - lower-40°F
 - upper.....+ 125°F
 Storage - lower-60°F
 - upper.....+160°F

Shipping and Storage Data:

Packing arrangement2 mines, 2 fuzes, 1
 wrench, & 2 activators in
 bag. 2 bags (4 mines) in
 wire-bound box

Weight.....124.5 lb
 Cube3.9 cu ft

Hazard class/division and
 storage compatibility

group 1.1D
 UNO serial number.....0137
 UNO proper shipping
 name Mines
 DOT shipping classClass A Explosive
 DOT marking.....EXPLOSIVE MINES
 DODAC1345-K250
 PaintingOlive Drab
 MarkingYellow

Explosive Data:

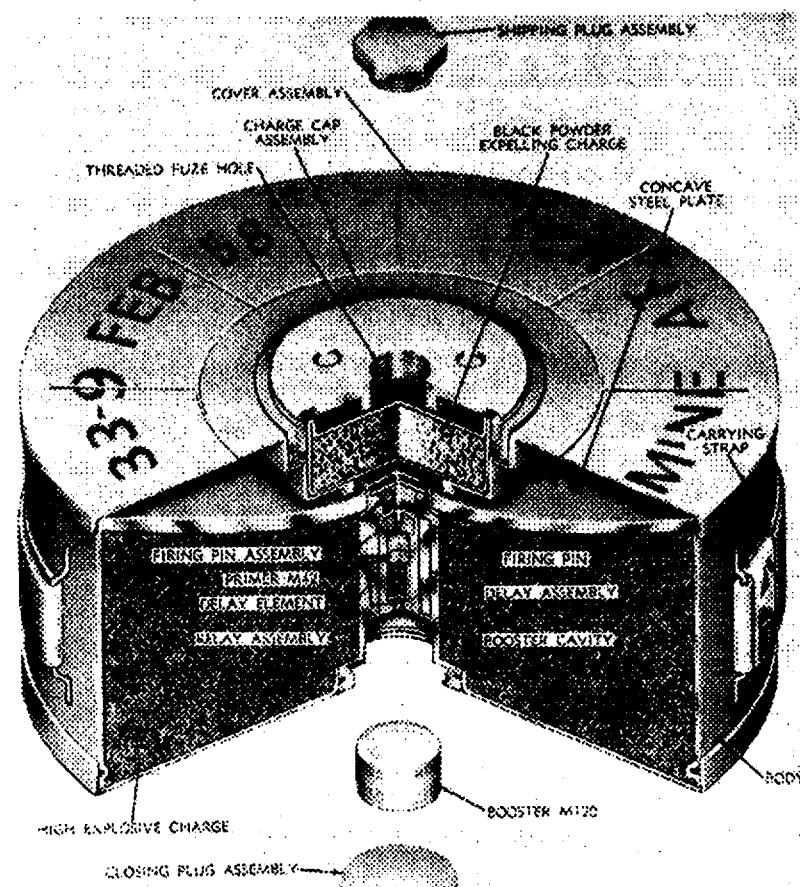
| Item | Type | Weight | |
|----------------------------|-----------|---------|---------|
| | | AV | Metric |
| M606 Fuze - | | | |
| M50 Det | PA #100 | 1.62 gr | 105 mg |
| | Lead Az | 3.85 gr | 250 mg |
| | RDX | 7.85 gr | 510 mg |
| M19 Mine - | | | |
| Booster | RDX | 805 gr | 52.1 gm |
| Main chg | Comp B | 21 lb | 9.53 kg |
| M2 Activator - (when used) | | | |
| M31A1 Det | Ar Ign Mx | 1.62 gr | 105 mg |
| Lead Az | 3.86 gr | 250 mg | |
| Tetryl | 4.17 gr | 270 mg | |
| Pellet | RDX | 40 gr | 2.58 gm |

Reference:

TM 9-1345-203-12&P

MINE, ANTITANK: HE, HEAVY, M21

MINE, ANTITANK: HE, HEAVY, M21

**Type Classification:**

S 37246 (LCC-A)

Use:

Mine M21 is used primarily for destroying tanks and tracked and wheeled vehicles. It is a standoff type that can penetrate 3-inch armor plate at a distance of 21 inches. It also functions as a blast-type mine.

Description:

Mine M21 is composed of a cover assembly and a cylindrical steel body. The cover assembly includes the charge cap assembly with a threaded fuze hole closed by a shipping plug, a black powder charge, and the cover. The mine body contains a concave steel dish, and HE charge, firing pin, and delay assembly. The delay assembly consists of the M42 primer, a delay element, and a relay charge. A booster is placed separately in the mine and it is assembled with the mine packing box when the mine is fuzed. The M607 fuze is screwed into the mine charge cap and the extension rod

and extension rod adapter, if provided, are assembled to the fuze. The extension rod adapter was eliminated after 1963.

Functioning:

The fuze M607 for the mine is actuated by applying a horizontal force greater than 3.75 pounds at the end of the extension rod. The fuze is also actuated by a directly applied downward force of 290 pounds. The fuze ignites the black powder expelling charge in the mine and the resulting detonation opens up the mine cover and removes the earth covering the mine. Back pressure from the burning propellant drives the firing pin into the M42 primer which, in turn, ignites the delay assembly. After 0.15 second, the relay assembly is detonated, firing the M120 booster, which, in turn, fires the main charge. The steel dish is then driven at high velocity against the target. The arming wrench M26 is provided for use with this mine and fuze.

Tabulated Data:

Model numberM21
 TypeAntitank
 Drawings:
 Assembly.....8831341
 Weight17.5 lb
 Dimensions:
 Height - fuzed.....8.125 in.
 Height w/ext rod32 in.
 Max diam9 in.
 Material Steel
 Threads:
 Fuze well.....0.75-UNS-2B
 Booster Cavity.....1.375-18NEF-2A
 Fuze (see separate
 write-up)M607
 Temperature limits:
 Firing - lower.....-40°F
 - upper.....+125°F
 Storage lower.....-60°F
 - upper.....+ 160°F
 Shipping and Storage Data:
 Packing arrangement2 mines w/2 fuzes w/2
 boosters in barrier bag. 2
 bags (4 mines) w/2
 wrenches in wire-bound
 box
 Weight.....90 lb
 Dimensions29-1/4 x 12-1/2 x13-1/2
 in.
 Cube2.85 cu ft

Hazard class/division and
 storage compatibility
 group1.1D
 UNO serial number.....- 0137
 UNO proper shipping
 name -Mines
 DOT shipping class - Class A Explosive
 DOT marking.....EXPLOSIVE MINES
 DODAC1345-K181
 PaintingOlive Drab
 MarkingYellow

Explosive Data:

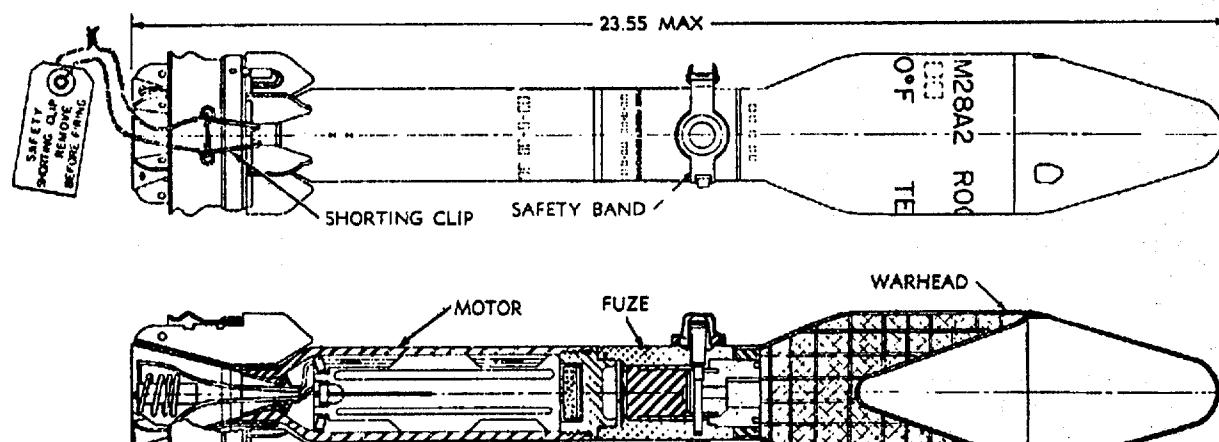
| Item | Type | Weight | |
|-------------------|-------------|----------|-----------|
| | | AV | Metric |
| M607 Fuze- | | | |
| | M101 Primer | 0.35 gr | 22.7 mg |
| | M46 Det | 1.62 gr | 105 mg |
| | Lead Az | 4.31 gr | 280 mg |
| | RDX | 2.24 gr | 1456 mg |
| M21 Mine- | | | |
| | M120 Boost | RDX | 172.48 gr |
| | | Lead Az | 4.62 gr |
| | Relay Assy | RDX Type | 4.23 gr |
| | Main chg | Comp H-6 | 10.8 lb |
| | | | 4.9 kg |

Reference:

TM 9-1345-203-12&P

MINE, ANTITANK: HE, M24

MINE, ANTITANK: HE, M24

**Type Classification:**

S 8899 (LCC-B)

Use:

The antitank mine M24 is a remotely operated horizontal effects device, used to defend against tracked and wheeled vehicles. It supplements standard, vertical effects mines, in that off-route emplacement of the rocket permits mine of locations that could not otherwise be effectively mined.

Description:

The M24 mine has six basic components, plus auxiliary equipment, as follows:

Discriminator Assembly, Antitank Mine M2. This assembly consists of a 22 meter length of wire connected to an 11 meter plastic-covered pressure actuated switch. The switch is composed of four 2.6 meter segments with spacing between them. To assure operation with tracked or wheeled vehicles, pressure is required on two of the adjacent segments to close the electrical circuit.

Rocket, HE, 3.5-inch Antitank, M28A2. This rocket has been modified by the addition of the folding fin assembly and by splicing the leads of the rocket connecting cable to the rocket motor. The 15 meter rocket connecting cable terminates in a connector for attachment to the M61 firing device.

Launcher, Rocket, M143. The launcher is a 24 inch long plastic tube housing the rocket.

Elevation and Azimuth Sighting Assembly. The sighting and aiming equipment consists of a tube containing a peep sight and crosshairs, and a pair of self centering legs for positioning of the launcher tube.

Firing Device, Demolition, M61. This assembly consists of an arm/safe toggle switch together with an indicator light mounted in a box which has provision for batteries. The box is equipped with a safety cover, connectors for the discriminator assembly, and the rocket cable assembly and a transistorized firing circuit. Batteries are issued separately and are not installed until mine is being employed.

Bipod Assembly. This accessory provides an adjustable base for the launcher. It consists of a two-pronged base, a short vertical rod with a knurled nut which provides adjustment in elevation, and a yoke which grips the launcher tube near one end. Either forward or aft end may be chosen, depending on type of aiming correction desired. The auxiliary equipment consists of a discriminator spool and accessory pouches. The discriminator assembly is wound on the outside of the spool and the core of the spool forms an accessory compartment in which the bipod assembly, the sighting assembly, and the firing device are carried. The entire M24 mine is carried in two green nylon pouches and when strapped together they form the M190 antitank mines case. One pouch contains the rocket launcher and the other contains the discriminator spool.

Functioning:

A vehicle crossing the pressure switch at two adjacent segments completes the circuitry to the firing device which electrically fires the igniter in the rocket motor. The igniter initiates the propellant and launches the rocket. The fuze is initiated upon impact and penetration of the target vehicle is effected by the shape charge warhead. Although the rocket has a maximum range of 825 meters it is used in the M24 mine to cover a range up to 30 meters.

Tabulated Data:

Model number M24
 Type Off-route, AT
 Drawings:
 Assembly 9207411
 Weight:
 Total 18 lb
 Rockets only 9 lb
 Dimensions:
 Rocket:
 Length 23.55 in.
 Max diam 9 in.
 Material:
 Rocket:
 Motor Steel
 Warhead Copper/Steel
 Fuze:
 Rocket M404A2
 Type Mech-BD
 Battery Type (not included):
 2 required for Firing
 Device BA-3202/U
 Temperature Limits:
 Firing - lower -40°F
 - upper +125°F
 Storage - upper +120°F
 Shipping and Storage Data:
 Packing 2 mines, incl fuzed
 rockets in wire-bound box

Weight 55 lb
 Dimensions 28-1/8 x 13-7/8 x 10-3/4 in.
 Cube 2.7 cu ft
 Hazard class/division and storage compatibility
 group 1.1E
 UNO serial number 0181
 UNO Proper shipping name Rockets
 DOT shipping class - Class A Explosive
 DOT marking- ROCKET AMMUNITION
 W/EXPLOSIVE
 PROJECTILES
 DODAC 1345-K182
 Painting Olive Drab
 Marking Yellow

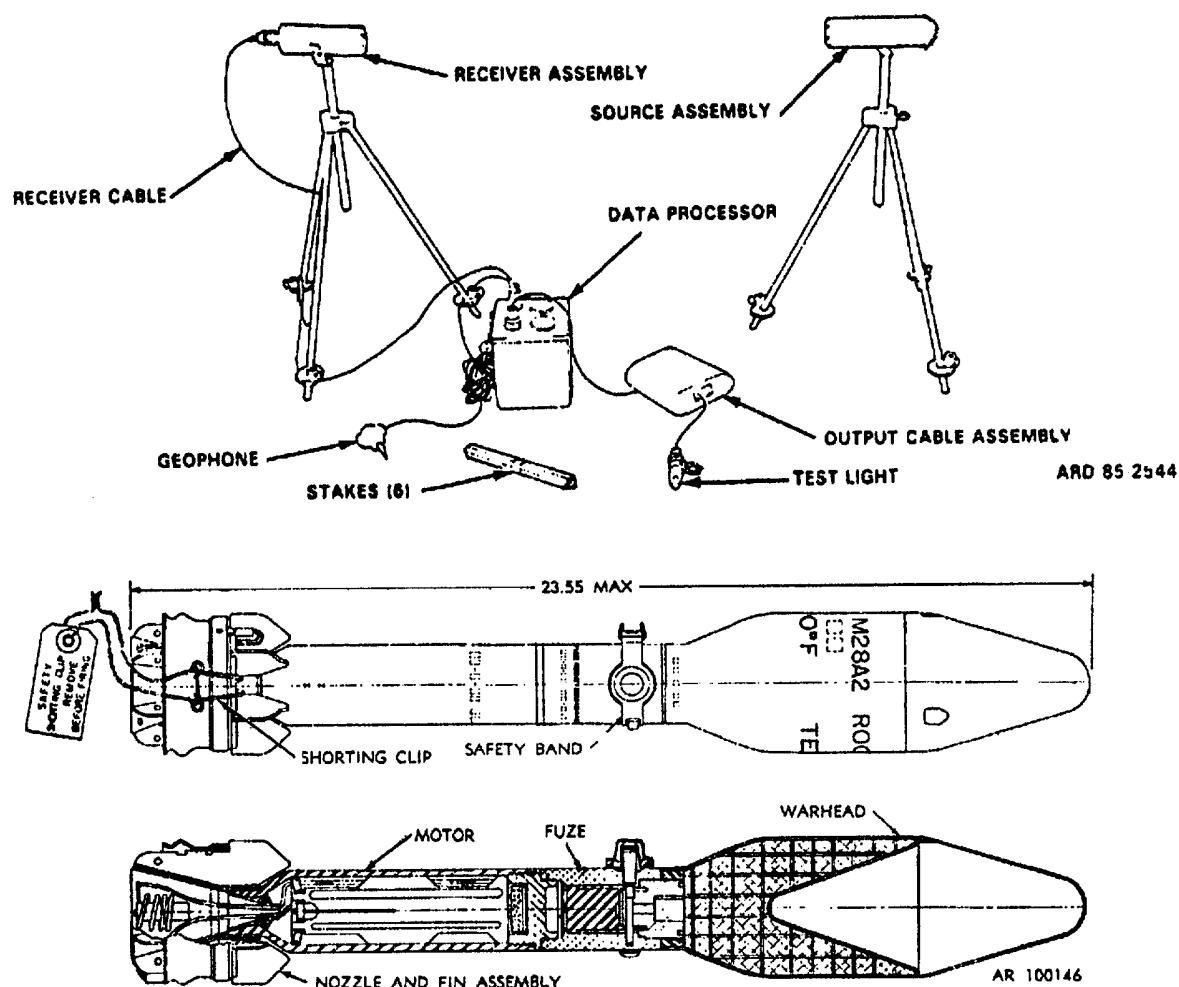
Explosive Data:

| Item | Type | AV | Weight | |
|------------------------|----------|---------|---------|--------|
| | | | Metric | Metric |
| M28A2 Rocket Motor - | | | | |
| M2 Elec Sq | flsh pdr | 1 gr | 65 mg | |
| Igniter | blk pdr | 54 gr | 3.5 gm | |
| Propellant | M7 | 0.35 lb | 159 gm | |
| M404A2 Rocket Fuze - | | | | |
| PA #100 | | 1.62 gr | 105 mg | |
| M41 Det | Lead Az | 3.86 gr | 250 mg | |
| Booster | Tetryl | 1.67 gr | 108 mg | |
| Booster | Tetryl | 75 gr | 4.86 gm | |
| M28A2 Rocket Warhead - | | | | |
| Shaped Chg Comp B | | 1.88 lb | 853 gm | |

Reference:

TM 9-1345-203-12&P

MINE, ANTITANK: HE, M66

**Type Classification:**

OBS 03866008

Use:

The antitank mine M66 is a remotely actuated, horizontal effects device, used to defend against tracked and wheeled vehicles. It supplements standard, vertical effects mines, in that off-route emplacement permits mining of locations that could not otherwise be effectively mined. Although, basically similar to the M24 mine, it differs in that no initiating device need be contacted by the target to function the mine.

Description:

The mine M66 is a system capable of delivery by parachute. It can be carried as a backpack and emplaced by one man. The mine has six basic component assemblies as follows:

Fuze, Mine, Igniting Type, M619. This fuze is an electronic detector/discriminator consisting of five components. The Source Assembly is a tripod mounted infra red beam generator. The Receiver Assembly is a tripod mounted infrared beam receiver. Stabilizing stakes are provided for both the Source and Receiver Assemblies. The geophone is a seismic device emplaced in the ground to sense the approach of tanks. The Data Processor, which receives inputs from the Receiver and the geophone, can analyze these and discriminates between tanks and personnel and/or animals. If the proper signal is received, the Data Processor will fire the rocket at the target. The Output Cable Assembly transmits the firing command to the rocket.

Rocket, HE, 3.5-inch Antitank, M28A2. This rocket has been modified by the addition of the folding fin assembly and by splicing the two leads in the firing cable and spool assembly to leads connected to the rocket motor squib.

Launcher, Rocket, M143. The launcher is a 24-inch-long plastic tube housing the rocket.

Elevation and Azimuth Sighting Assembly. The sighting and aiming equipment consists of a tube containing a peepsight and crosshairs, and a pair of self centering legs for positioning of the launcher tube.

Bipod Assembly. This accessory provides an adjustable base for the launcher. It consists of a two-pronged base, a short vertical rod with a knurled nut which provides adjustment in elevation, and a yoke which grips the launcher tube near one end. Either forward or aft end may be chosen, depending on type of aiming correction desired. The auxiliary equipment consists of two elongated sand bags, a protective end cover for the launcher, and a thumb screw wrench. The required batteries are issued separately.

Functioning:

Mine system M66 operates on the principle of remote detection and automatic functioning. The geophone detects an approaching vehicle through ground vibration and signals the data processor that a target is enroute. When the target vehicle breaks the infrared (IR) beam generated by the source assembly, the receiver signals the data processor. The processor releases electrical energy to fire the rocket only under the conditions of a broken IR beam and a proper seismic signal. This system is inhibited against personnel and animals by a filter in the data processor. Small vehicles do not normally function the system. However, the influence of small vehicles on system functioning increases in some areas depending upon closeness to geophone, speed of vehicle and terrain at the emplacement site.

Tabulated Data:

| | |
|-----------------------|---------------|
| Model number | M66 |
| Type | Off-route, AT |
| Drawings: | |
| Assembly..... | 9245817 |
| Weight: | |
| Total | 40 lb |
| Rocket only | 9 lb |
| Dimensions: | |
| Rocket: | |
| Length | 23.55 in. |
| Max diam..... | 3.5 in. |
| Material: | |
| Rocket: | |
| Body Steel | |
| Warhead..... | Copper/Steel |
| Rocket launcher | Plastic |
| IR Source | Aluminum |
| IR Receiver | Aluminum |
| Data Processor..... | Aluminum |
| Geophone | Plastic/Steel |

Fuze:

| | |
|--------------|------------|
| System | M619 |
| Type | Electronic |
| Rocket..... | M404A2 |

Type Mech-BD

Battery Types (not included):

| | |
|---------------------|-----------|
| 2 required for Data | |
| Processing..... | BA-3202/U |
| 1 required for Data | |
| Processing..... | BA-1114/U |

1 required for IR SourceBA-1114/U

Temperature Limits:

| | |
|--------------------|--------|
| Firing -lower..... | -40°F |
| -upper - | +125°F |

Shipping and Storage Data:

| | |
|--|--|
| Packing | 1 mine M66 w/fuze M619/barrier bag/wirebound box |
| Weight..... | 70 lb |
| Dimensions | 32-3/4 x 22-7/8 x12-5/8 in. |
| Cube | 5.4 cu ft |
| Hazard class/division and storage compatibility | |
| group | 1.1E |
| UNO serial number..... | 0181 |
| UNO Proper shipping name | |
| Rockets | |
| DOT shipping class | Class A Explosive |
| DOT marking..... | ROCKET AMMUNITION W/EXPLOSIVE PROJECTILES |
| DODAC | 1345-K183 |
| Painting | Olive Drab |
| Marking | Yellow |

Explosive Data:

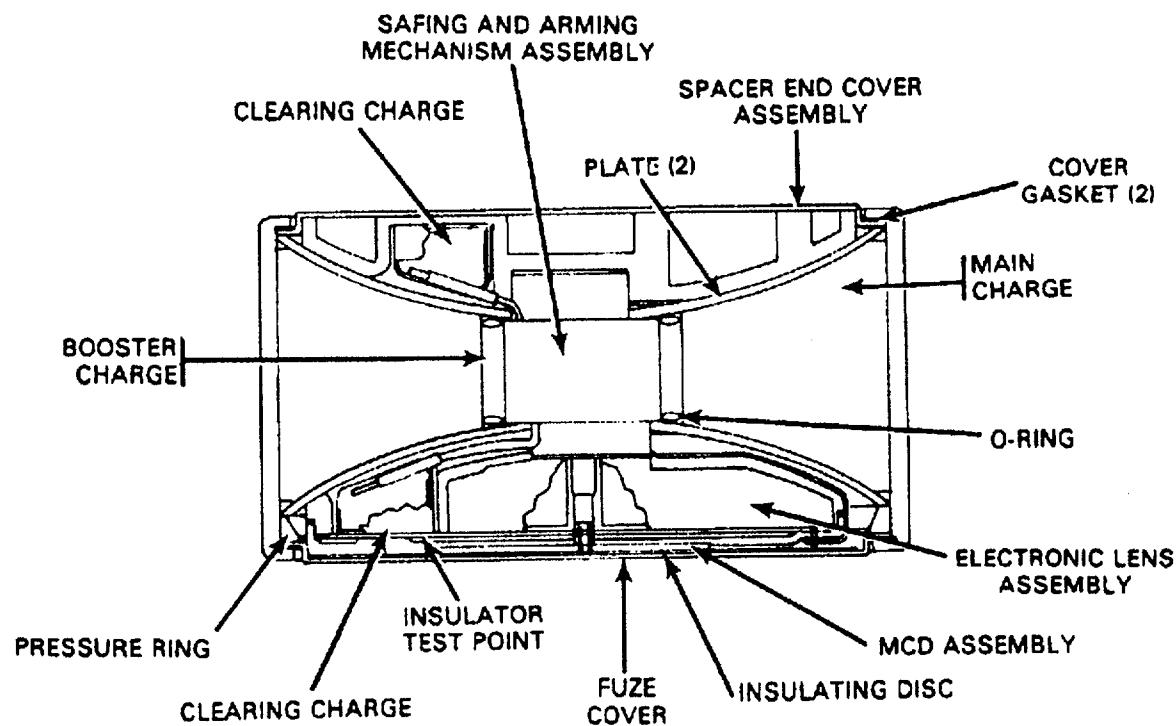
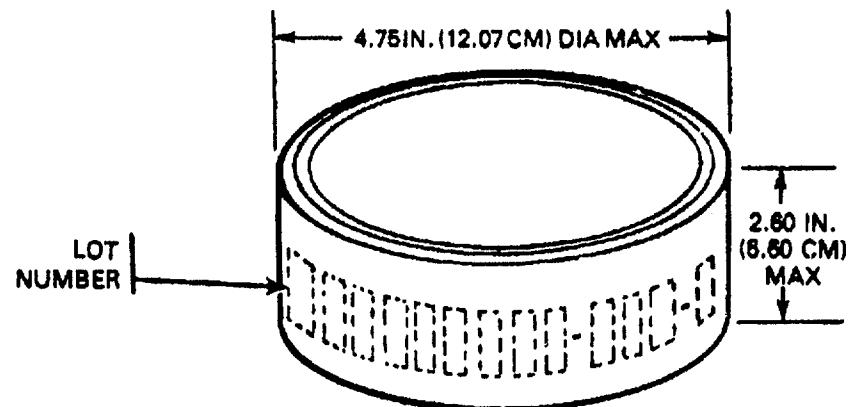
| Item | Type | AV | Weight | |
|------------------------|----------|---------|--------|---------|
| | | | Metric | Weight |
| M28A2 Rocket Motor - | | | | |
| M2 Elec Sq | fish pdr | 1 gr | | 65 mg |
| Igniter | blk pdr | 54 gr | | 3.5 gm |
| Propellant | M7 | 0.35 lb | | 159 gm |
| M404A2 Rocket Fuze- | | | | |
| PA #100 | | 1.62 gr | | 105 mg |
| M41 Det | Lead Az | 3.86 gr | | 250 mg |
| Tetryl | | 1.67 gr | | 108 mg |
| Booster | Tetryl | 75 gr | | 4.86 gm |
| M28A2 Rocket Warhead - | | | | |
| Shaped Chg Comp B | | 1.88 lb | | 853 gm |

Reference:

TM 9-1345-203-12&P

MINE, ANTITANK: HE, M75

MINE, ANTITANK: HE, M75



Type Classification:

STD-LCC-A (LET 4-11-80, ARDC).

Use:

The ground burst antitank mine M75 can be emplaced only by the ground vehicle mine dispenser M128. The mine may be used in mixed minefields or by itself against heavy tanks and other types of heavy tracked and wheeled vehicles.

Description:

The mine is green, cylindrical in shape, and fabricated of thick-wall steel tubing. It has an internal Safing and Arming (S&A) device, an electronic assembly, and a power supply. Some of the M75 mines have an antidisturbance switch within the mine, as indicated by the last digit in the lot number. A lot number ending with a "-2" indicates that the mine has an antidisturbance switch; a lot number ending with a "-1" indicates no switch. The mine is set for a specific (normal) self-destruct time by the manufacturer; however, during operations it can be set for a long self-destruct time, depending on the mission requirement. The mines are shipped and stored in a sealed, desiccated container. The container holds eight sleeves, each containing five mines (one mine with an antidisturbance switch and four mines with no antidisturbance switch), for a total of 40 mines per container. The containers are palletized, with six containers per pallet.

Functioning:

Partial arming results from the angular velocity obtained as the mine travels through the launcher of the dispenser. A magnetic impulse provided by two transmitter coils located in the launcher muzzle initiates a low-order detonating primer, which activates two reserve batteries. The batteries provide the electrical power to complete the arming cycle after the mine comes to rest on the ground. The mine is completely armed in 40 to 60 seconds after launch and is then ready to detect a target.

The mine will function in response to any of the following conditions: (1) vehicle passing over the mine, (2) physical disturbance of the mine, (3) expiration of self-destruct time, or (4) power rundown.

Tabulated Data:

Mine, Antitank: HE, M75:

| | |
|----------------------|---------------------|
| Painting ----- | Green |
| Marking ----- | Black |
| Height (max) ----- | 2.60 in. (6.60 cm) |
| Diameter (max) ----- | 4.75 in. (12.07 cm) |
| Weight----- | 4.00 lb (1.81 kg) |
| Material ----- | Steel tubing |

Operational Temperature Limits:

| | |
|---------------|----------------|
| Minimum----- | -40°F (-40°C) |
| Maximum ----- | +150°F (+66°C) |

Explosive Weight per Mine:

| | |
|----------------------------|-------------------|
| RDX and Estane (95/5)----- | 1.26 lb (0.57 kg) |
| PBXN-5 ----- | 0.05 oz (14.27 g) |

Self-Destruct Times After Launch:

| | |
|-------------|---------|
| Normal----- | 5 days |
| Long ----- | 15 days |

Safety Distances:

| | |
|-----------------------------------|---|
| Vertical ----- | 1,300 ft (396 m) |
| Horizontal ----- | 2,086 ft (636 m) |
| DODAC ----- | 1345-K184 |
| UNO serial number ----- | 0137 |
| UNO proper shipping name ----- | Mines |
| Packing arrangement----- | 5 mines per sleeve (1 with an anti- disturbance and 4 with no anti- disturbance switch), 8 sleeves per container, 6 containers per pallet |
| NSN ----- | 1345-01-078-4104 |

Shipping and Storage Container - EMPTY:

| | |
|-------------------|------------------------|
| Length ----- | 27.30 in. (69.30 cm) |
| Width ----- | 14.10 in. (35.81 cm) |
| Height----- | 15.20 in. (38.61 cm) |
| Weight----- | 55.0 lb (25.0 kg) |
| Cube ----- | 3.40 cu ft (0.10 cu m) |
| NSN ----- | 8140-01-089-2763 |
| Part number ----- | 9313655 |

Shipping and Storage Container - LOADED:

| | |
|---|---------------------|
| Weight ----- | 232.0 lb (105.2 kg) |
| Storage compatibility group ----- | D |
| Quantity-distance class for depot storage----- | 1.1 |
| Quantity-distance class for field storage----- | E |
| DOT shipping class----- | A |
| DOT markings----- | EXPLOSIVE MINE |
| U.S. Coast Guard classification ----- | VII |
| Shelf life----- | 20 yr |

Storage Temperature Limits:

| | |
|---------------|----------------|
| Minimum----- | -60°F (-51°C) |
| Maximum ----- | +155°F (+63°C) |

Sleeve (empty):

ColorGreen
Length24.48 in. (62.18 cm)
Width5.63 in. (14.30 cm)
Height.....3.50 in. (8.89 cm)
Weight.....2.12 lb (0.96 kg)

Pallet (loaded with full containers):

Length55.50 in. (140.97 cm)
Width43.00 in. (109.22 cm)
Height.....23.13 (58.75 cm)

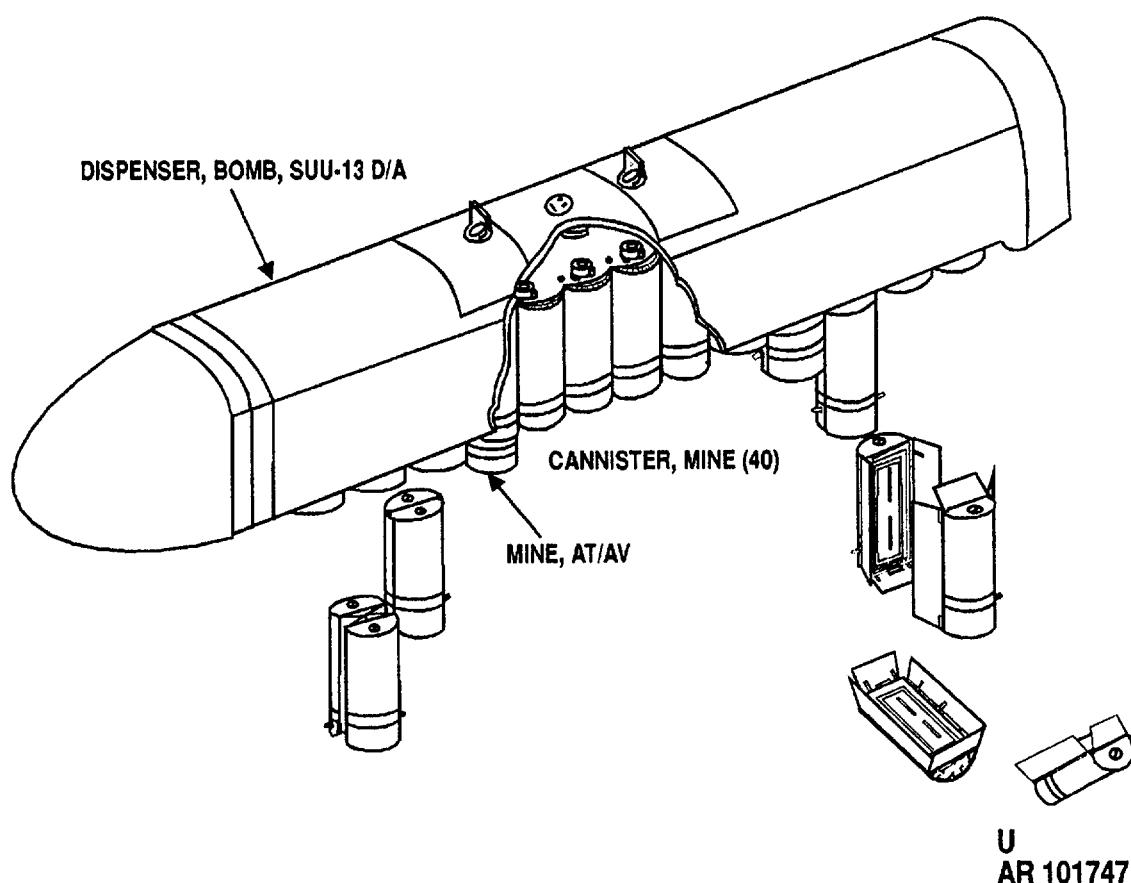
Weight (approximate,
including dunnage)1573 lb (714 kg)
Cube31.93 cu ft (0.09 cu m)

References:

SC 1340/98-IL
TM 9-1095-205-10
TM 9-1345-210-23&P

**Section II. MINES, AERIALLY DISPERSED,
ANTITANK/ANTIVEHICLE MINES**

MINE DISPERSING SUBSYSTEM, AIRCRAFT: M56

**Type Classification:**

STD A MSR 09746012, dated 20 Nov. 73

Use:

The M56 subsystem provides the means for aerially dispensing antitank/antivehicle (AT/ AV) mines from UH-1H helicopters.

Description:

One complete subsystem consists of a SUU13D/A dispenser loaded with 40 canisters, each canister containing two AT/AV mines and one M198 ejection charge. The mines are in the shape of half of a 4-5/8-inch diameter cylinder and are 10-3/8 inches long. Each AT/AV mine fuze contains an electronic timing module, an electric timing module, an electric detonator, and is powered by a 7.0 volt battery. The firing train following the detonator is comprised of an RDX lead and an RDX booster pellet. Three pounds of Composition H6 constitutes the main charge of each mine.

Functioning:

Two subsystems are mounted per helicopter. A Dispenser Control Panel (DCP) is installed in the helicopter console which enables the pilot, or other crew member, to control the quantity and time-interval of mines fired. An electrical signal from the DCP through the dispenser intervalometer initiates an M198 ejection charge which ejects both mines from the canister. As the mines leave the canister, a bore rider pin in each mine is released which unlocks the fuze mechanical safety device. When the mines are free of the canister, spring loaded fins open which cause the mines to orient so they will land round side down. Upon impact, the mechanical safety device releases, which allows the fuze slider to move into the position which alines the firing train. It also closes a microswitch in the fuze electrical circuit which initiates electrical arming. After ground impact, the mine may tumble and come to rest in any orientation. One to two minutes after impact, the mine is fully armed and ready to be encountered by a target. The fuze in the basic mines will initiate electrically. When a mine contains the antistrike (AD) feature

any overrun or agitation of a mine will cause functioning. All versions of the mine contain a self-destruct (SD) feature which has an electrochemical (E-cell) timing unit and a low voltage detector (LVD). When armed mine has not been functioned by over-run or AD, it will SD in 38 to 48 hours. Prior to SD, all mines will function if any attempt is made to remove the battery or to disrupt the battery circuit.

Tabulated Data:

NOTE
Dimensions and weights are approximate.

Mine Dispersing Subsystem ...M56:

Length 90.38 in.
 Width 14.75 in.
 Height 14.44 in.
 Weight, empty, without 117.01b
 pallet
 Weight (loaded as flown) ... 640 lb
 Weight of pallet 40 lb
 Number of canisters 40
 Distance between
 suspension lugs 14 in.
 Center of gravity (from
 front end (loaded)) 51.6 in.
 Weight of explosive contents
 (per dispenser):
 Weight (H6 explosive) .. 240 lb
 Weight (RDX
 explosive) 969 gm
 Weight (M5
 propellant) 12.8 gm

Mine Canister:

Height 11.9 in.
 Diameter 4.80 in.
 Weight:
 Empty 1.8 lb
 Loaded 13.0 lb

Number of mines per
 canister 2

Number of mine ejection
 charges per canister 1

Explosive Weight per Canister:

Comp H6 6.0 lb
 RDX 17.4 gm
 M5 propellant 0.32 gm

Mine Ejection Charge M198:

| | |
|---|---------|
| Weight (loaded)..... | 34 gm |
| Explosive weight (M5 propellant) | 0.32 gm |

Antitank Mine:

| | |
|--------------------------------------|-----------|
| Length..... | 10.38 in. |
| Diameter (half-cylindrical) | 4.63 in. |
| Weight..... | 5.6 lb |
| Explosive weight (Comp H6)..... | 3.0 lb |

Shelf Life:

| | |
|-----------------|-------|
| Shelf life..... | 5 yrs |
|-----------------|-------|

Temperature Limitations (battery):

| | |
|---------------|----------------|
| Minimum | -25°F (-32°C) |
| Maximum | +145°F (+62°C) |

Shipping and Storage Container

CNU-79/E (late model):

| | |
|---------------------------|-----------|
| Length..... | 104 in. |
| Length (early model)..... | 115.6 in. |
| Width | 31.5 in. |
| Height..... | 31.5 in. |

Weight:

| | |
|------------------------|----------|
| Without dispenser..... | 681 lb |
| With dispenser..... | 1,368 lb |

| | |
|------------|------------|
| Cube | 59.7 cu ft |
|------------|------------|

Hazard class/division and

storage compatibility

| | |
|-------------|------|
| group | 1.1D |
|-------------|------|

| | |
|--------------------------|-------------------|
| DOT shipping class | Class A Explosive |
|--------------------------|-------------------|

| | |
|------------------|-----------------|
| DOT marking..... | EXPLOSIVE BOMBS |
|------------------|-----------------|

| | |
|-----------------------|--|
| Quantity distance for | |
|-----------------------|--|

| | |
|--------------------|---|
| field storage..... | E |
|--------------------|---|

| | |
|------------------|--|
| U.S. Coast Guard | |
|------------------|--|

| | |
|---------------------|-----|
| classification..... | X-A |
|---------------------|-----|

| | |
|-------------|-----------|
| DODAC | 1345-K020 |
|-------------|-----------|

| | |
|----------------------|---------|
| Drawing number | 9287573 |
|----------------------|---------|

References:

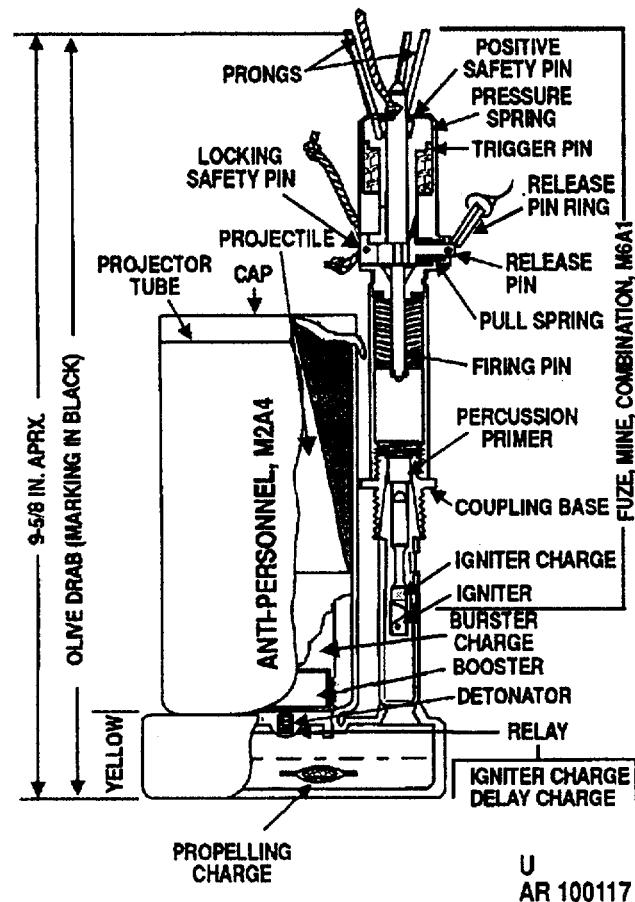
| | |
|--------------------|--|
| SB 700-200 | |
| TM 9-1300-200 | |
| TM 9-1345-201-12 | |
| TM 9-1345-201-30&P | |

CHAPTER 3

ANTIPERSONNEL MINES

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MINE, ANTI PERSONNEL: M2A4 (M2A4B2)

Type Classification:

OBS 11756003

Use:

Antipersonnel mines M2A4 and M2A4B2 are of the bounding, fragmenting-type and are used when an effective above-ground fragmentation pattern is required.

Description:

General. The mine consists of a steel case, with a propelling charge in the base. The combination mine fuze M6A1 is screwed into the tube attached to the base. The projectile, a modified 60mm mortar shell, is contained in the projector tube attached to the base. The propelling charge is ignited by the firing pin-primer-igniter train of the fuze. The mine is shipped with primer and igniter in place. Firing mechanism is shipped separately in fuze box and is screwed into igniter tube.

Difference between models. M2A4 has a stamped steel base. M2A4B2 has a cast iron base which is sealed to the projector tube and to the fuze well pipe with solder, to provide a better moisture-proof seal.

Functioning:

The firing mechanism is functioned either by a 3 to 10 pound pull on a trip wire or by a force of 8 to 10 pounds on one or more of the prongs protruding from the top of the fuze. This pull or push releases the firing pin which strikes the primer and initiates the firing train which ignites the propelling charge. This propelling charge ignites the delay charge and propels the projectile into the air where its delay train detonates the projectile at approximately 2 to 3 meters.

Tabulated Data:

Model numberM2A4, M2A4B2
 TypeAP, bounding
 Drawings:
 Assembly:
 M2A4.....82-0-99
 M2A4B2.....82-0-116
 Weight - loaded and fuzed6.5 lb
 Dimensions:
 Height, fuzed9.625 in.
 Max diameter4.10 in.
 Material Steel
 Thread - fuze well0.563-12UNC-1A
 Fuze number (see separate
 write-up)M6A1
 Temperature Limits:
 Firing:
 Lower.....-40°F
 Upper+125°F
 Storage:
 Lower.....-60°F
 Upper+160°F
 Shipping and Storage Data:
 Packing arrangement1 mine w/1 - spool stl wire
 in ctn, 6 ctn (6 mines)
 w/acc. in wdn box
 Weight.....50 lb
 Dimensions15 x 10-1/4 x 9-1/4 in.
 Cube0.82 cu ft
 Hazard class/division and
 storage compatibility
 group(08) 1.2E

UNO serial number.....0138
 UNO Proper shipping
 nameMines
 DOT shipping classClass A Explosive
 DOT marking.....EXPLOSIVE MINES
 DODAC1345-K090
 Painting:
 BodyOlive Drab
 BaseYellow
 MarkingBlack

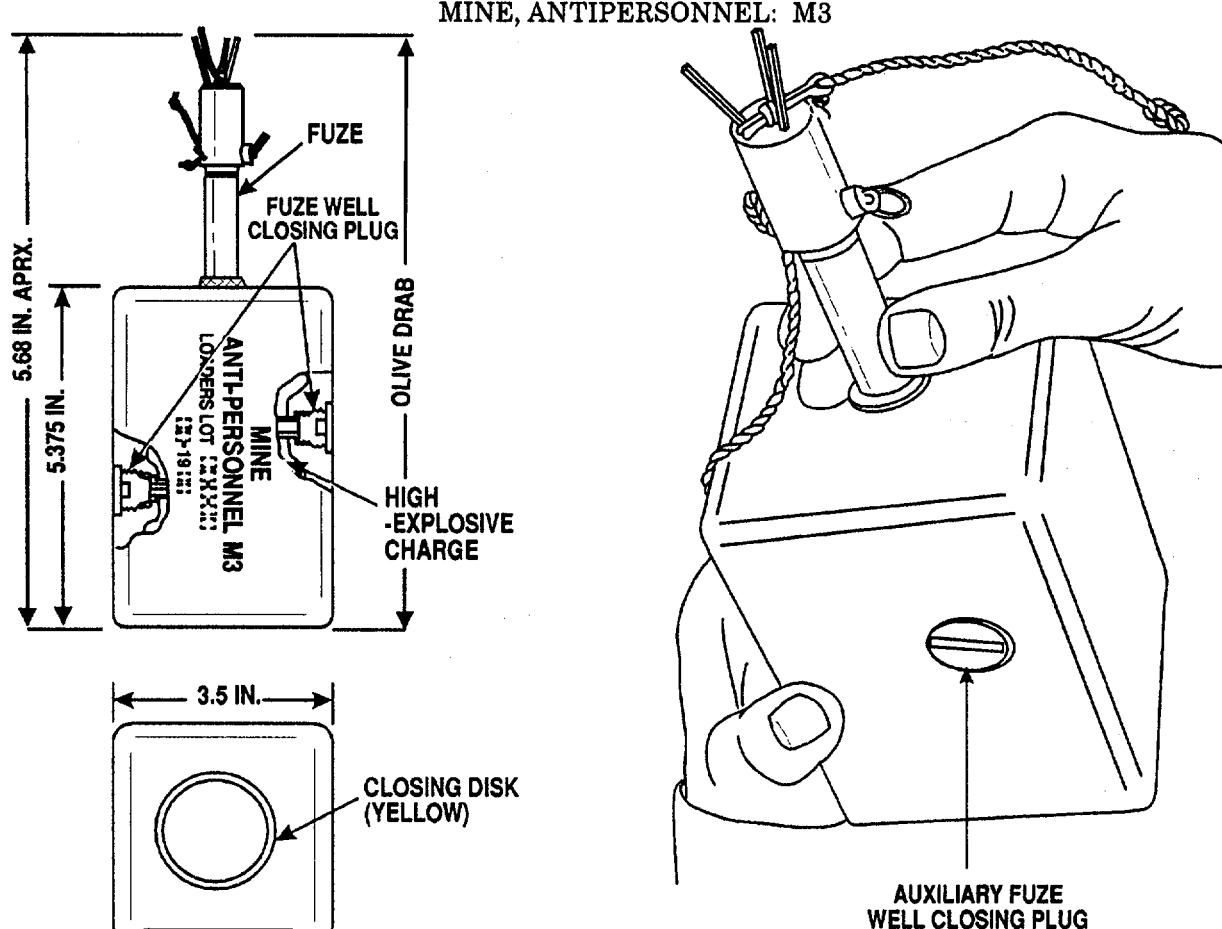
Explosive Data:

| Item | Type | AV | Weight | |
|-------------|------------|---------|--------|----------|
| | | | Metric | Weight |
| M6A1 Fuze: | | | | |
| Perc primer | #3 Western | | | |
| Igniter | blk pdr | 10 gr | | 648 mg |
| Mine base: | | | | |
| Propellant | blk pdr | 40 gr | | 259 gm |
| Projectile: | | | | |
| Rel-Delay | blk pdr | 2.7 gr | | 175 mg |
| Igniter | blk pdr | 1.16 gr | | 75 mg |
| | Lead Az | 4.08 gr | | 265 mg |
| M17 Det | Tetryl | 1.24 gr | | 80 mg |
| Booster | Tetryl | 248 gr | | 16.1 gm |
| Main Chg | TNT | 2380 gr | | 154.2 gm |

Reference:

TM 9-1345-203-12&P

MINE, ANTIPERSONNEL: M3

Type Classification:

OBS-11756003

Use:

The M3 mine is used when fragmenting, non-directional, antipersonnel mine is required. The mine is normally placed at the surface, but the effective radius can be increased if it is raised several feet above the ground. If buried, the effective radius is considerably reduced.

Description:

The M3 mine consists of a high explosive charge in a heavy, cast iron body. The body is filled with flake TNT and contains three threaded fuze wells to aid in booby trapping in a variety of fusing arrangements. As shipped, fuze well holes are closed with slotted plastic plugs.

Functioning:

A pressure of 8 to 20 pounds on any of the prongs, or a pull of 3 to 10 pounds on the release pin ring of the

M7A1 fuze will release the firing pin to strike the primer. The primer explodes the nonelectric blasting cap, crimped to the base of the fuze, initiating the TNT bursting charge in the mine body.

Tabulated Data:

Model number M3

Type AP, frag

Drawings:

Assembly 82-0-79

Weight (loaded and fuzed) 10.3 lb

Dimensions:

Height - fuzes 8.68 in.

Max dia 3.5 in.

Material Cast iron

Thread:

Fuze wells 563-12NC-1

Fuze number (see separate
write-up) M7A1

Temperature Limits:

Firing:

Lower -40°F
 Upper +125°F

Storage:

Lower -60°F
 Upper +160°F

Shipping and Storage Data:

Packing arrangement 6 mines, 6 fuzes, 6 spools
 - steel wire in wooden box

Weight 73.2 lb

Dimensions 17-7/8 x 8-3/4 x 9-1/2 in.

Cube 0.86 ft

Hazard class/division and
 storage compatibility
 group 1.1D

UNO serial number- 0137

UNO Proper shipping
 name Mines

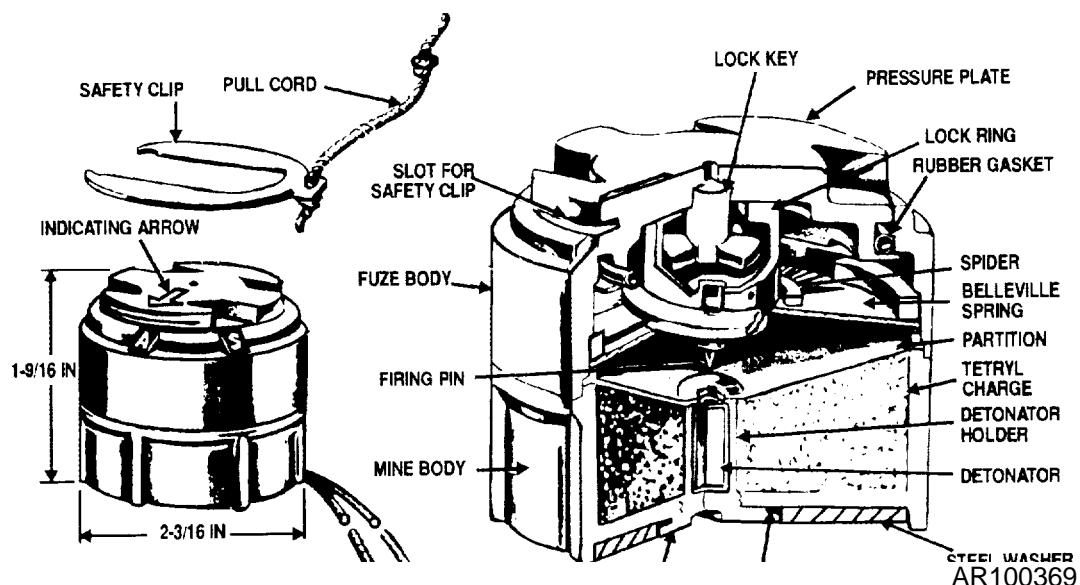
DOT shipping class Class A Explosive
 DOT marking EXPLOSIVE MINES
 DODAC 1345-K120
 Painting Olive Drab
 Marking Black

Explosive Data:

| Item | Type | AV | Weight | |
|------------|-----------------|---------|--------|----------|
| | | | Metric | Weight |
| M7A1 Fuze: | | | | |
| Primer | No. 3 Western | | | |
| | Battery | | | |
| Cap | Type 1 Special | | | |
| | Blasting Cap | | | |
| M3 Mine: | | | | |
| | Main Charge TNT | 6300 gr | | 407.6 gm |

MINE, ANTI PERSONNEL, NONMETALLIC: M14

MINE, ANTI PERSONNEL, NONMETALLIC: M14

Type Classification:

S37904 (LCC-B)

Use:

Antipersonnel mine M14 is a blast-type mine and is used when small, readily concealed mines are required.

Description:

The M14 mine is cylindrical in shape, with six ribs on the outside of the body to provide strength and serve as a means of identification in darkness. The mine is of practically all-plastic construction and is detectable by magnetic mine detectors. M14 mine contains an integral pressure operated fuze. The pressure plate of the mine is designed to transfer the load to a firing pin mounted on a belleville spring. When the load reaches a predetermined value, the belleville spring snaps into reverse, driving the steel firing pin into the detonator. The pressure plate has a yellow indicating arrow and is indented to accommodate the M22 mine and fuze wrench. Letters A and S on fuze body indicate Armed and Safe, respectively. Slots in the pressure plate are for insertion of the steel U-shaped, safety clip. A pull

cord is provided for removing the clip when arming the mine. A carrying cord is also provided. For safety, the plastic detonator holder assembly with detonator is packaged separately within the same shipping container. The hole for the detonator holder assembly in the underside of the mine is closed by a plastic plug during shipment. The mine and fuze wrench is also used for removal of the shipping plug and installation of the detonator holder. A steel washer is attached to the bottom of the mine to aid in detection.

Functioning:

With mine set on A, and safety clip removed, a force of 20 to 35 pounds applied to the pressure plate will depress the belleville spring. At some point, the belleville spring snaps into reverse, driving the firing pin into the M46 detonator. This sets off the main charge.

Tabulated Data:

| | |
|--------------------|-----------|
| Model number | M14 |
| Type..... | AP, blast |
| Drawings: | |
| Assembly | 75-15-55 |

Weight 4.5 oz
 Dimensions:
 Height 1-9/16 in.
 Max dia 2-3/16 in.
 Material Plastic
 Thread:
 Detonator holder 438-20UNC-2A
 Fuze Integral

Temperature Limits:
 Firing:
 Lower -40°F
 Upper +125°F

Storage:
 Lower -60°F
 Upper +160°F

Shipping and Storage Data:Item

Packing arrangement 90 mines in carton in set-up box and 9 wrenches, in wooden box

Weight 50 lb.

Dimensions 19-3/4 x17-1/4 x 8-3/4 in.
 Cube 1.73 cu ft
 Hazard class/division and storage compatibility group 1.1D
 UNO serial number 0137
 UNO Proper shipping name Mines
 DOT shipping class Class A Explosive
 DOT marking EXPLOSIVE MINES
 DODAC 1345-K121
 Painting Olive Drab
 Marking Yellow

Explosive Data:

| Item | Type | Weight | |
|---------------|------------|----------|----------|
| | | AV | Metric |
| | NOL #130 | 1.62 gr | 105 mg |
| M46 Detonator | Lead Azide | 4.31 gr | 280 mg |
| | RDX | 2.24 gr | 145 mg |
| Main Charge | Tetryl | 437.5 gr | 28.35 gm |

Reference:

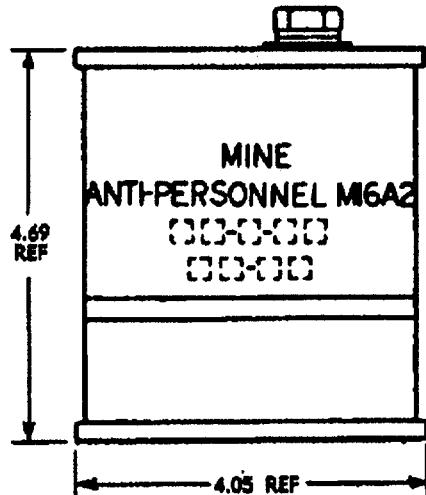
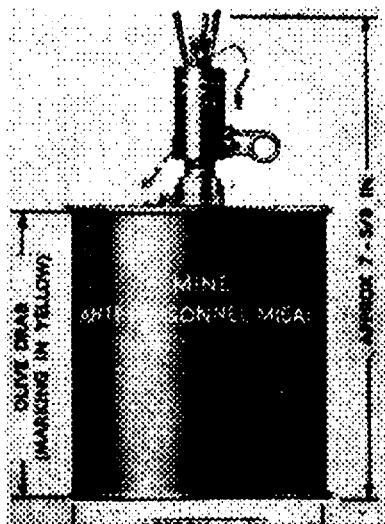
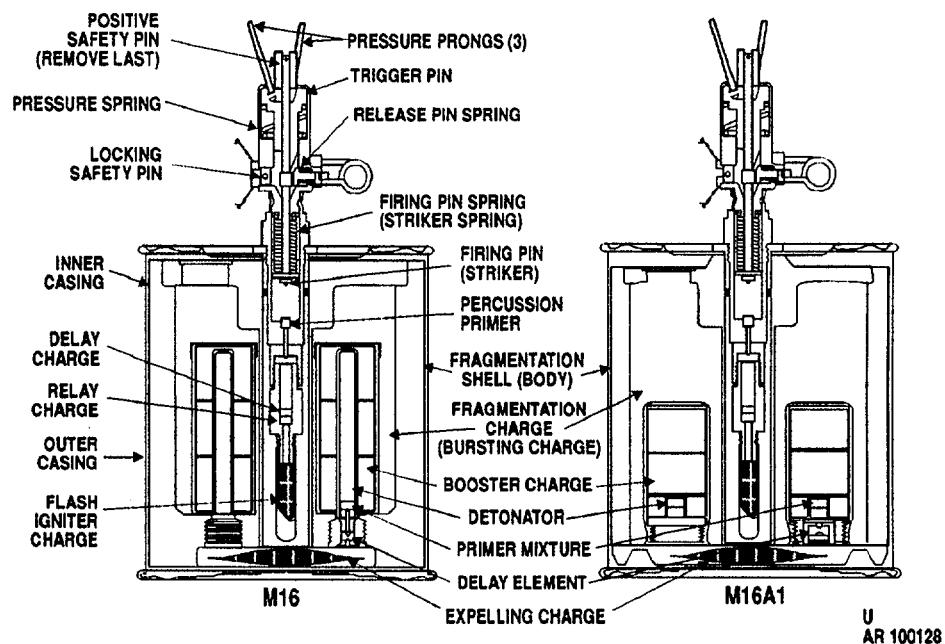
TM 9-1345-203-12&P

★U.S. GOVERNMENT PRINTING OFFICE: 1997-545-037/60704

Change 2 3-8

MINE, ANTI PERSONNEL: M16 (M16A1, M16A2)

MINE, ANTI PERSONNEL: M16 (M16A1, M16A2)

**Type Classification:**

M16 Conf. 6558

M16A1 S 3686 (LCC-B)

M16A2 S 3686 (LCC-A)

Use:

The M16 series mines are of the bounding, fragmenting type, and are employed primarily in mixed mine fields to protect antitank mines against enemy breaching parties. They can be used by themselves in the preparation of ambushes or in the nuisance mining of areas likely to be occupied by enemy troops.

Description:

General. This mine consists of a combination mine fuze M605, a propelling charge, and a cast iron, fragmenting projectile all contained in a sheet steel case. The fuze screws into the fuze well in the top of the case and extends through the projectile to the bottom of the case where the propelling charge is located. No secondary fuze wells are provided and booby trapping of the M16 series mine will be done only by specially trained personnel.

Difference between models. The principal difference between the M16 and M16A1 models is in the construction of the detonators and the boosters. Mine M16A2 is an advanced version of the series and incorporates only one booster detonator and delay instead of two each. This allows greater room for explosive charge.

Functioning:

WARNING

- **WHEN HANDLING THE M605 FUZE, ALWAYS TAKE CARE TO AVOID PUSHING ON THE CIRCULAR DEPRESSION IN THE BODY OF THE FUZE OPPOSITE THE TRIP WIRE PULLING BOSS. THIS IS THE SLIDER HOLDING THE FIRING PIN AND ANY MOVEMENT (EVEN THE SMALL AMOUNT ALLOWED WITH THE SAFETY COTTER PIN IN PLACE) CAN PLACE THE FIRING PIN CLOSER TO THE POINT OF RELEASE.**
- **IN ARMING THE M605 FUZE, ALWAYS PULL THE POSITIVE SAFETY PIN WITH YOUR FINGERS NOT BY PULLING JUST ON THE STRING. THIS WILL AVOID IMPARTING A SHOCK TO THE FUZE WHICH COULD ACTUATE IT.**

The M16 series firing mechanism is functioned by either a 3 to 15 pound pull on a trip wire or by a force of 8 to 45 pounds on one or more of the prongs protruding from the top of the fuze. This pull or push releases the firing pin which strikes the primer which ignites the fuze delay charge. The delay allows time for persons stepping on the prongs to move from directly above the mine. The fuze delay ignites the relay charge which ignites the fuze igniter charge. The fuze igniter charge ignites the mine propelling charge which projects the shell body upward and at the same time ignites the detonator delay charge. The detonator delay charge burns through and initiates the detonator which explodes boosters which explodes the bursting charge about one meter above the ground. The wrench M25 is furnished with this mine. The box end fits the shipping plug and the open end fits the fuze.

Tabulated Data:

Model numbers M16, M16A1, M16A2
Type AP, bounding, frag

Drawings:

Assembly:

| | |
|-------------|----------|
| M16 | 82-0-194 |
| M16A1 | 8796365 |
| M16A2 | 8876013 |

Weight (fuzed):

| | |
|-------------|---------|
| M16 | 8.25 lb |
| M16A1 | 8.25 lb |
| M16A2 | 6.25 lb |

Dimensions:

| | |
|----------------------|----------|
| Height (max) | 7.82 in. |
| Diameter (max) | 4.05 in. |

Material Steel and cast iron

Thread-primary fuze well.....0.625-11UNC-1A

Fuze (see separate

write-up) M605

Temperature Limits:

Firing:

| | |
|-------------|---------|
| Lower..... | -40°F |
| Upper | + 125°F |

Storage:

| | |
|-------------|--------|
| Lower..... | -60°F |
| Upper | +160°F |

Shipping and Storage Data:

Packing:

| | |
|---------------------|--|
| M16 and M16A1 | 4 mines, 4 fuzes, 4 spools wire, 1 wrench, in wooden box |
|---------------------|--|

| | |
|-------------|---|
| M16A2 | 4 mines, 4 fuzes, 2 spools wire, 1 wrench barrier bag in wooden box |
|-------------|---|

Weight.....44.8 lb

Dimensions:

| | |
|-----------------------|-----------------------------|
| M16 | 15-5/8 x 10-1/8 x 8-1/2 in. |
| M16A1 and M16A2 | 15-5/8 x 9-3/4 x 8-1/2 in. |

Cube:

| | |
|-----------------------|------------|
| M16 | 0.78 cu ft |
| M16A1 and M16A2 | 0.75 cu ft |

Hazard class/division and

storage compatibility

group

(08) 1.2E

UNO serial number.....0138

UNO Proper shipping

name

Mines

DOT shipping class

Class A Explosive

DOT marking.....

EXPLOSIVE MINES

DODAC

1345-K092

Painting

Olive Drab

Marking

Yellow

Explosive Data:

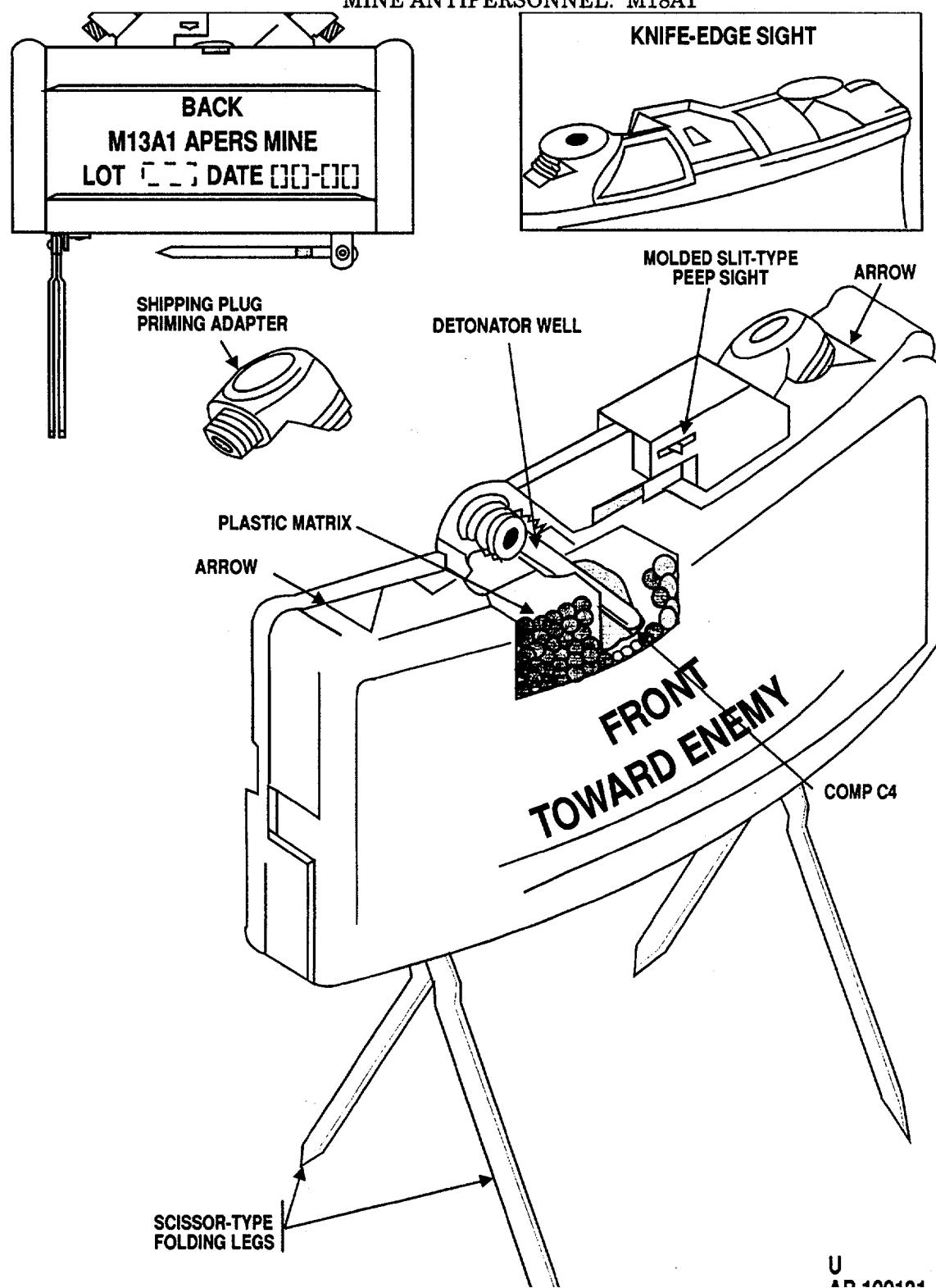
| Item | Type | Weight | | M16A1 Mine Projectile: | | | |
|----------------------|------------|----------|----------|------------------------|----------|----------|----------|
| | | AV | Metric | Delay | Blk Pdr | 4.2 gr | 280 mg |
| M605 Fuze: | | | | | Lead Sty | 4.6 gr | 300 mg |
| M42 Primer | #793 Prim | 0.34 gr | 22 mg | | Lead Az | 10.8 gr | 700 mg |
| Delay | Comp Tp II | 7.03 gr | 475 mg | Booster | 5Tetry | 606 gr | 32.8 gm |
| Flsh Ig n | C1 Blk Pdr | 10 gr | 648 mg | Main Charge | TNT | 1.13 b | 513 gm |
| M16, M16A1, | | | | M16A2 Mine Projectile: | | | |
| M16A2 Mines: | | | | | Blk Pdr | 2.1 gr | 140 mg |
| Expell Chg | Blk pdr | 70 gr | 4.53 gm | Delay | Lead Sty | 2.3 gr | 150 mg |
| M16 Mine Projectile: | | | | Detonator | Lead Az | 5.4 gr | 350 mg |
| | Blk Pdr | 4.2 gr | 280 mg | Booster | Comp A5 | 172.4 gr | 11.18 gm |
| Delay | Lead Sty | 4.6 gr | 300 mg | Main Charge | TNT | 1.3 lb | 590 gm |
| Detonator | Lead Az | 10.8 gr | 700 mg | | | | |
| Booster | Tetryl | 76.2 gr | 4.92 gm | | | | |
| Booster | Tetryl | 839.2 gr | 54.36 gm | | | | |
| Main Charge | TNT | 1.15 lb | 521 gm | | | | |

Reference:

TM 9-1345-203-12&P

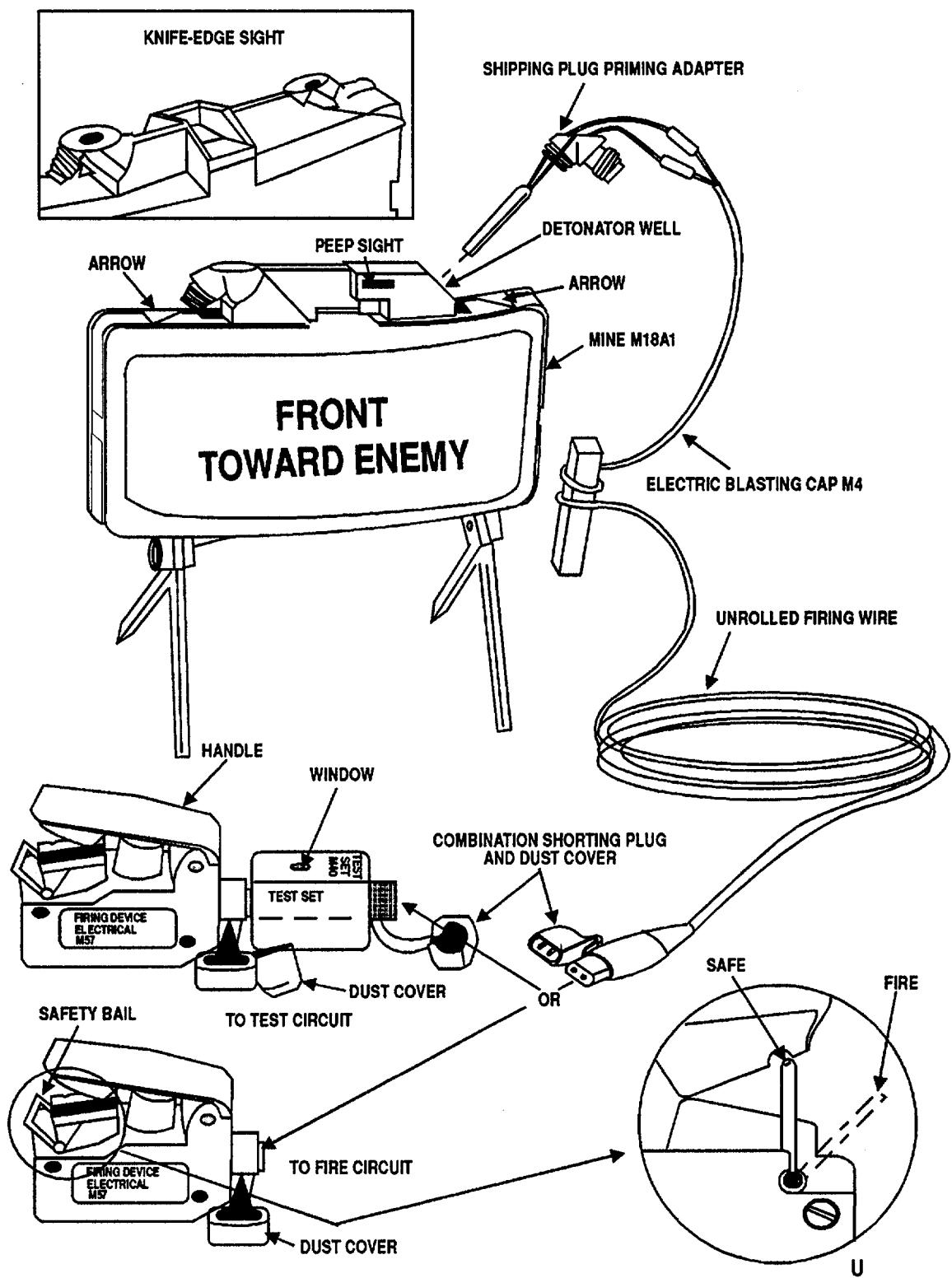
MINE ANTIPERSONNEL: M18A1

MINE ANTIPERSONNEL: M18A1



MINE, ANTI PERSONNEL: M18A1

MINE, ANTI PERSONNEL: M18A1



Type Classification:

(M18A1) S 37809 (LCC-A)

Use:

The M18A1 mine is used when a directional, fixed, fragmentation mine is required for the defense of bivouac areas, outposts, and against infiltration tactics. It is also used against thin-skinned vehicles.

Description:

General. Mine M18A1 has a curved, rectangular, olive drab, molded case of fiberglass-filled plastic. The front face is lined with steel spheres embedded in a plastic matrix. The back portion of the case, behind the matrix, contains C4 explosive. The fragmentation face is convex, horizontally, to direct the fragments in a 60 degree arc, and concave, vertically, to control the vertical dispersion of the fragments. A built-in sight and two pairs of scissors-type folding legs allow aiming of the mine. Two detonator wells located in the top of the mine enable the mine to be fired from two locations. The wells are sealed by the plug ends of the shipping plug priming adapters. The adapter is reversed when the mine is to be armed and the slotted end of the adapter is used to hold the blasting cap. The mine is shipped with several special components. The Cap, Blasting, Electric M4 assembly consists of an M6 electric blasting cap and 30 meters of firing wire, terminating in an electrical connector and shorting plug. The firing device is an M57 hand-held pulse generator with an electrical connector and dust cover. The test set M40 is used to visually test circuit continuity. The bandoleer M7 is constructed to carry one complete set of components.

Functioning:

The M18A1 mine main charge may be initiated by electrical or nonelectrical methods. The electrical method is by initiation of the electric blasting cap assembly by use of the M57 pulse generator firing device. The nonelectric method makes use of a pull type firing device operated by an observer, or by trip wires. The firing device initiates a length of detonating cord attached to a nonelectric blasting cap.

Tabulated Data:

Model number M18A1
 Type AP, frag
 Drawings:
 Assembly 88351.66
 Weight-less fuze 3.5 lb
 Dimensions:

Height 3.25 in.
 Width 8.5 in.
 Thickness 1.375 in.
 Material Plastic
 Thread-detonator wells 0.563-12 UNC-1A
 Fuze Elec blasting cap assy M4
 Activating force 1-squeeze of hand-held M57 activator handle

Temperature Limits:**Firing:**

Lower -40°F
 Upper +125°F

Storage:

Lower -60°F
 Upper +160°F

Shipping and Storage Data:

Packing 1 mine, 1 cap blasting, 1 firing device in band, 6-band, 1 test set elec, 1 ID tag in wdn box (6 mines)

Weight 53 lb

Dimensions 15-3/4 x 11-1/8 x 18-1/8 in.

Cube 1.84 cu ft

Hazard class/division and storage compatibility

group 1.1D

UNO serial number 0137

UNO Proper shipping name Mines

DOT shipping class Class A Explosive

DOT marking EXPLOSIVE MINES

DODAC 1345-K143

Painting Olive Drab

Marking Black

Explosive Data:

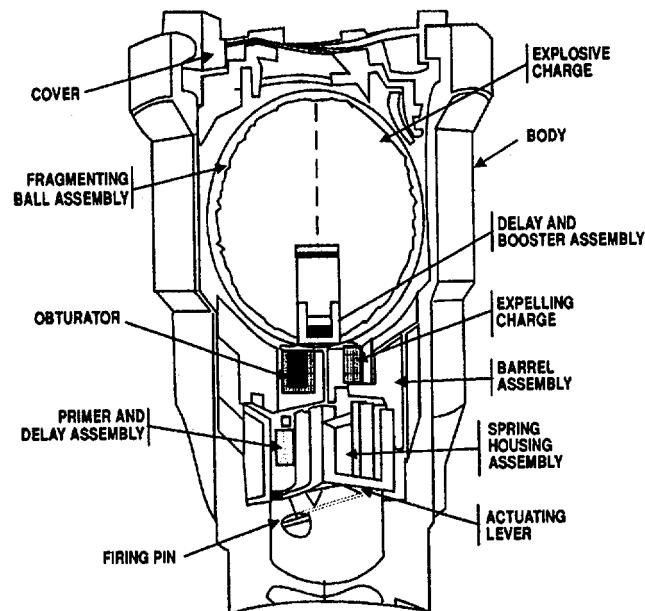
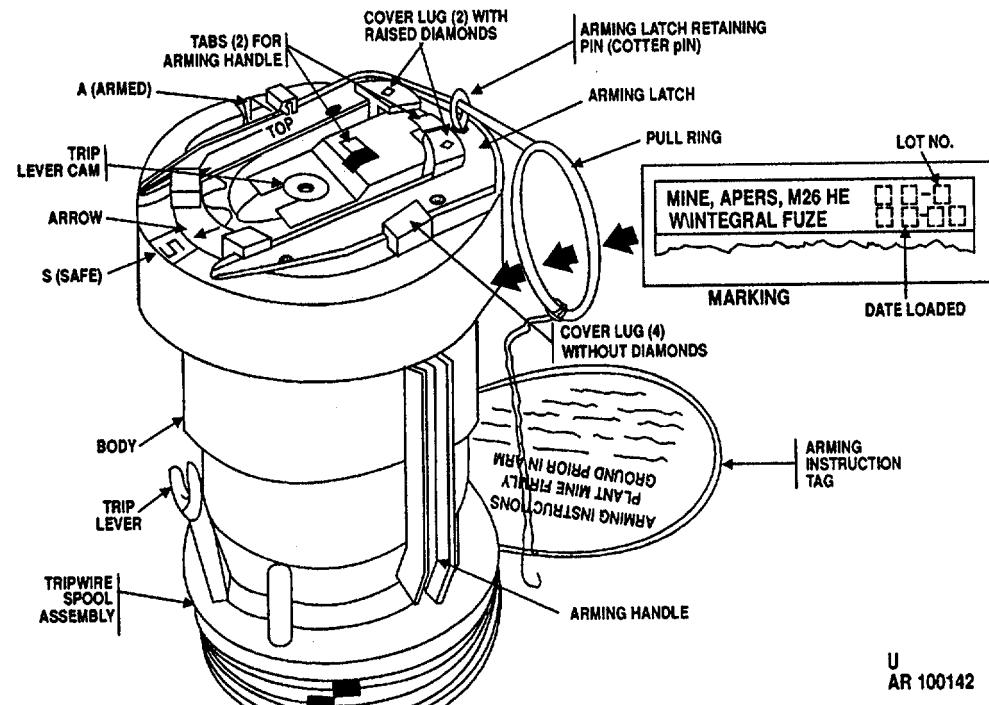
| Item | Type | Weight | |
|-----------------|--------|---------|--------|
| | | AV | Metric |
| M18A1 Mine: | | | |
| M4 Cap Assy | | | |
| M6 Elec Cap RDX | | 13.5 gr | 875 mg |
| Mine: | | | |
| Main Chg | Comp 4 | 1.6 lb | 682 gm |

Reference:

TM 9-1345-203-12&P

MINE, ANTI PERSONNEL: M26

MINE, ANTI PERSONNEL: M26

U
AR 100143U
AR 100142Type Classification:

OBS 03866012

Use:

The M26 mine is of the bounding, fragmenting type and is used when an effective above ground fragmentation pattern is required.

Description:

The M26 mine is a small, integrally fuzed, bounding type, antipersonnel mine. The body is of die-cast aluminum and is relatively cylindrical in shape, but tapering toward the bottom where there are four external vertical ribs. On the rim, at the top of the body, are two recesses, with a raised S for Safe in one, and a raised A for Armed in the other. The cover is built with six lugs and the prongs of the arming latch fit between these to prevent rotation. The middle prong of the arming latch fits under the trip lever cam. The arming latch is saftied to the body by an arming latch retaining pin. The cotter pin is locked, after insertion, by spreading the ends which project below the rim of the mine body. The removable trip wire spool assembly consists of four 20 foot trip wires, a trip lever, and an arming handle, all assembled on a plastic spool. The fragmenting ball assembly consists of a steel ball containing an explosive charge, and a delay and booster assembly recessed within the charge. At the base of the ball a steel obturator or piston houses the propelling charge. The barrel is used to hold the fragmenting ball assembly in an upright position. When the mine is set on Safe (S), the flash hole in the barrel is out of alignment with the primer and delay assembly. When set on Armed (A) the flash hole is alined with the primer and delay assembly and permits ignition of the propellant. The spring housing assembly includes the firing pin assembly and actuating lever, and a primer and delay assembly.

Attached to, but easily removable from the mine are the following accessories: Arming Handle, Arming Instruction Tag, Trip Lever, and Spool Assembly. Four 20 foot trip wires, two colored olive drab and two tan, are stored on the spool.

Functioning:

Setting the mine to the armed (A) position rotates the barrel assembly so that the primer and delay assembly are in direct alinement with the flash hole in the barrel assembly and with the expelling charge directly above. A force of 14 to 28 pounds on the mine top, or a pull on the top level will activate the mine. Upon actuation, the spring loaded firing pin is released and fires the primer and delay assembly which ignites the expelling charge. This ejects the fragmenting ball assembly to a height of approximately 2 meters. The delay, ignited by the expelling charge, then initiates the booster which detonates the main charge, shattering the fragmenting ball. The mine may be rigged for tripwire activation. Remove the trip lever from storage in the spool assembly and insert in the threaded well in the cam, top, center. Attach one or more of the tripwires, as required.

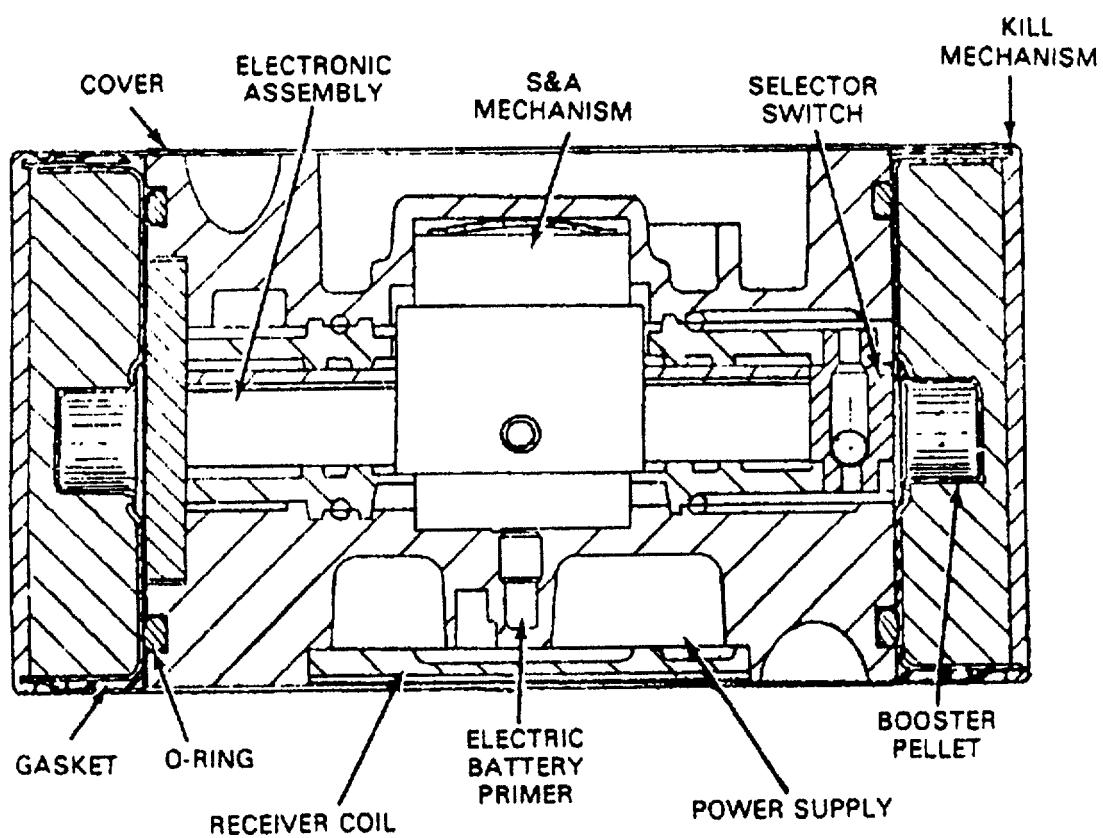
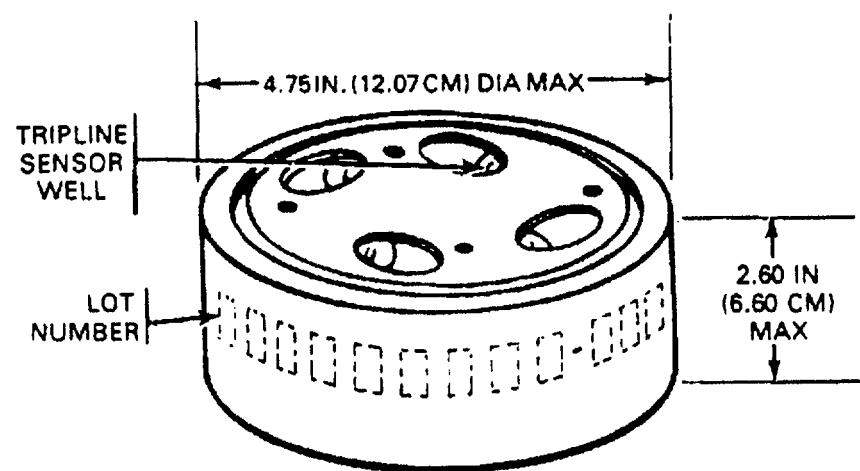
Tabulated Data:

| | | | |
|---|---|----------|--------|
| Model number | M26 | | |
| Type | APERS | | |
| Drawings: | Assembly.....8840286 | | |
| Weight | | 2.2 lb | |
| Dimensions: | | | |
| Height..... | 5.7 in. | | |
| Max diameter | 3.1 in. | | |
| Material | Aluminum/steel | | |
| Fuze | (integral) | | |
| Temperature Limits: | | | |
| Firing: | | | |
| Lower..... | -40°F | | |
| Upper | +125°F | | |
| Storage: | | | |
| Lower..... | -60°F | | |
| Upper | +160°F | | |
| Shipping and Storage Data: | | | |
| Packing | 3 mines per fiber container, 6 containers (18 mines) per wooden box | | |
| Weight..... | 601b | | |
| Dimensions | 21-1/4 x 12-1/2 x 9-3/4 in. | | |
| Cube | 1.5 cu ft | | |
| Hazard class/division and storage compatibility group | (08) 1.2E | | |
| DOT shipping class | Class A Explosive | | |
| DOT marking | EXPLOSIVE MINES | | |
| DODAC | 1345-K146 | | |
| UNO serial number | 0321 | | |
| UNO Proper shipping name | Cartridges for weapons | | |
| Painting | Olive Drab | | |
| Marking | Yellow | | |
| <u>Explosive Data:</u> | | | |
| | | Weight | |
| Item | Type | AV | Metric |
| Integral Mine Fuze: | | | |
| M42 Primer | #793 Mix | 0.34 gr | 22 mg |
| Delay chg | BA204 | 2.84 gr | 184 mg |
| | Se | 0.63 gr | 41 mg |
| Igniter | Eimite | 0.63 gr | 41 mg |
| Mine: | | | |
| Propellant | M9-Tpl | 10 gr | 648 mg |
| Delay Chg | Igniter* | 2.93 gr | 190 mg |
| | Lead Az | 3.47 gr | 225 mg |
| | Tetryl | 2.3 gr | 150 mg |
| Booster | Tetryl | 23 gr | 1.5 gm |
| Main Chg | Comp B | 0.375 lb | 170 gm |
| *Barium | | | |
| Chromate | | 2.61 gr | 169 mg |
| Beron | | | |
| Amorphous | Pdr | 0.29 gr | 19 mg |
| Vinyl Plastic | Resin | 0.03 gr | 2 mg |

Reference:

TM 9-1345-203-12&P

MINE, ANTIPERSONNEL: HE, M74



ARD 84-1701

Type Classification:

STD-LCC-A (LET 4-11-80, ARDC).

Use:

The ground burst antipersonnel mine M74 can be emplaced only by the ground vehicle mine dispenser M128. This mine may be used in mixed minefields to protect antitank mines against enemy breaching parties.

Description:

The mine is green, cylindrical in shape, and fabricated of thick-wall steel tubing which is internally scored for maintaining uniform fragment size. It has an internal Safing and Arming (S&A) device, an electronic assembly, a power supply, and four tripline assemblies at each end (eight total). The mine is set for a specific (normal) self-destruct time by the manufacturer; however, during operations it can be set for a long self-destruct time, depending on the mission requirement. The mines are shipped and stored in a sealed desiccated container. The container holds eight sleeves, each containing five mines for a total of 40 mines per container. The containers are palletized, with six containers per pallet.

Functioning:

Partial arming results from the angular velocity obtained as the mine travels through the launcher of the dispenser. A magnetic impulse provided by two transmitter coils located in the launcher muzzle initiates a low-order detonating primer, which activates the electrical power for mine functioning. After the mine comes to rest on the ground, a signal from the electronic assembly initiates a pressure cartridge, which causes ejection of the four tripline assemblies. The trip-lines uncoil from their bobbins until the tripline assemblies impact the ground. The mine is completely armed in 40 to 60 seconds after launch and is ready to detect a target.

The mine will function in response to any of the following conditions: (1) movement of a tripline, (2) physical disturbance of the mine, (3) expiration of the self-destruct time, or (4) power rundown.

Tabulated Data:

Mine, Antipersonnel: HE, M74:

| | |
|----------------------|---------------------|
| Painting ----- | Green |
| Marking ----- | Black |
| Height (max) ----- | 2.60 in. (6.60 cm) |
| Diameter (max) ----- | 4.75 in. (12.07 cm) |
| Weight----- | 3.10 lb (1.41 kg) |
| Material ----- | Steel tubing |

Operational Temperature Limits:

| | |
|---------------|----------------|
| Minimum----- | -40°F (-40°C) |
| Maximum ----- | +150°F (+66°C) |

Explosive Weight per Mine:

| | |
|----------------------|-------------------|
| Composition B4 ----- | 0.90 lb (0.41 kg) |
| Composition A5 ----- | 0.22 oz (6.35 g) |
| PBXN-5 ----- | 0.17 oz (4.70 g) |

Self-Destruct Times After Launch:

| | |
|--------------------------------|--|
| Normal----- | 5 days |
| Long ----- | 15 days |
| Tripline length ----- | 40.0 ft (12.2 m) |
| Safe horizontal distance ----- | 870 ft (265 m) |
| DODAC ----- | 1345-K151 |
| UNO serial number ----- | 0137 |
| UNO proper shipping name----- | Mines |
| Packing arrangement----- | 5 mines per sleeve, 8 sleeves per container, 6 containers per pallet |

NSN ----- 1345-01-076-3497

Shipping and Storage Container - EMPTY:

| | |
|-------------------|------------------------|
| Length ----- | 27.30 in. (69.30 cm) |
| Width ----- | 14.10 in. (35.81 cm) |
| Height----- | 15.20 in. (38.61 cm) |
| Weight ----- | 55.0 lb (25.0 kg) |
| Cube ----- | 3.40 cu ft (0.10 cu m) |
| NSN ----- | 8140-01-089-2763 |
| Part number ----- | 9313655 |

Shipping and Storage Container - LOADED:

| | |
|-----------------------------|--------------------|
| Weight ----- | 196.0 lb (88.9 kg) |
| Storage compatibility ----- | D |

| | |
|--|-----|
| group ----- | D |
| Quantity-distance class for depot storage ----- | 1.1 |

| | |
|--|---|
| Quantity-distance class for field storage ----- | E |
|--|---|

| | |
|--------------------------|---|
| DOT shipping class ----- | A |
|--------------------------|---|

| | |
|-------------------|----------------|
| DOT markings----- | EXPLOSIVE MINE |
|-------------------|----------------|

| | |
|--|-----|
| U.S. Coast Guard classification ----- | VII |
|--|-----|

| | |
|------------------|-------|
| Shelf life ----- | 20 yr |
|------------------|-------|

Storage Temperature Limits:

| | |
|---------------|----------------|
| Minimum----- | -60°F (-51°C) |
| Maximum ----- | +155°F (+63°C) |

Sleeve (Empty):

| | |
|--------------|----------------------|
| Color ----- | Green |
| Length ----- | 24.48 in. (62.18 cm) |
| Width ----- | 5.63 in. (14.30 cm) |
| Height----- | 3.50 in. (8.89 cm) |
| Weight ----- | 2.12 lb (0.96 kg) |

Pallet (Loaded with Full Containers):

| | |
|---|----------------------------|
| Length ----- | 55.50 in. (140.97 cm) |
| Width ----- | 43.00 in. (109.22 cm) |
| Height----- | 23.13 in. (58.75 cm) |
| Weight (approximate, including dunnage)----- | 1375 lb (616 kg) |
| Cube ----- | 31.93 cu ft (0.90 cu m) |

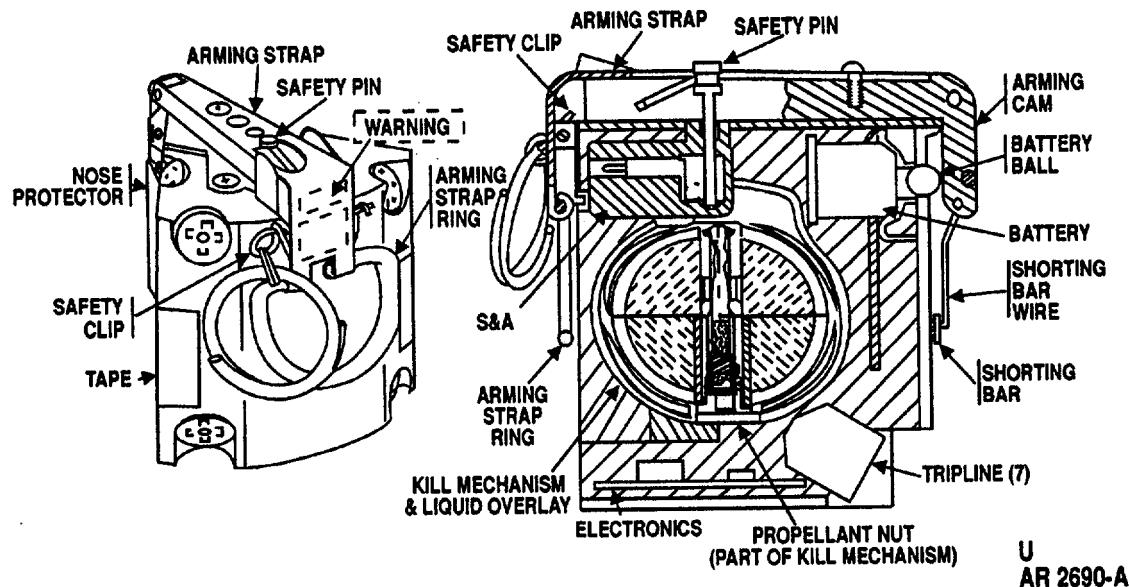
References:

SB 1340/98-IL
TM 9-1095-205-10
TM 9-1345-210-23&P

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3-20

MINE, ANTI PERSONNEL: M86 PURSUIT DETERRENT MUNITION (PDM)

Type Classification:

STD

Use:

The M86 Antipersonnel Mine is to be hand emplaced or deployed as a deterrent munition by special forces or selected personnel only on operations where they may be pursued by an enemy.

Description:

The M86 Mine is similar in configuration and possesses functioning characteristics of the ADAM Mine presently loaded in the 155mm projectile, M731 (and M692). The mine is wedge shaped, and contains a safety clip, arming strap assembly, internal safing and arming device, seven tripline sensors, a reserve battery, electronic circuitry containing an IC chip, and a kill mechanism surrounded by an overlay containing a liquid propellant, and encapsulated in molded plastic form.

Functioning:

WARNING

- ONCE ARMING STRAP IS LIFTED, DEPLOYMENT IS MANDATORY. DO NOT ATTEMPT TO RE-SAFE.
- SAFE SEPARATION TIME IS 25 SECONDS AFTER STRAP IS LIFTED. LEAVE AREA IMMEDIATELY AFTER EMPLOYMENT AND DO NOT RETURN TO AREA.

- THE M86 MINE HAS A SELFDESTRUCT FEATURE WHICH MAKES IT EXPENDABLE: THEREFORE, DO NOT RETURN TO AREA.

- DO NOT DEPLOY MINE BELOW -25°F. IF MINE IS DEPLOYED BELOW -25°F, MINE MAY SELF-DESTRUCT EITHER IN A 5-MINUTE TIME FRAME, OR LATER THAN THE PROGRAMMED SELF-DESTRUCT TIME FRAME.

- DO NOT REMOVE NOSE PROTECTOR OR NOSE PROTECTOR TAPE. REMOVAL OF TAPE MAY DAMAGE THE ELECTROMAGNETIC RADIATION (EMR) AND ELECTROSTATIC DISCHARGE (ESD) PROTECTIVE PAINTS.

- IF ONE OR MORE TRIPINES ARE FOUND DEPLOYED PRIOR TO USE, DO NOT ARM OR ATTEMPT TO USE THE PDM. TURN IN MINE FOR DISPOSAL.

The M86 Antipersonnel Mine is manually armed by removing the safety clip and then the arming strap assembly. A camming action breaks the shorting bar and forces the battery ball against the battery breaking the glass ampule containing an electrolyte which activates the reserve battery and provides power. The shorting bar hook, attached to the cam, shears the shorting bar (a safety device across the detonator). After a 60-second (nominal) electronic time delay, a piston actuator in the Safe and Arm mechanism is electrically fired, moving a slider to align the detonator with an explosive lead in the slider. At the same time, seven sensor triplines are released. Approximate three or four triplines will deploy up to 20 feet from the mine, depending upon the at-rest position of the mine. The remaining triplines may be hindered due to their proximity to the resting surface. After an additional 10-second electronic time delay, allowing the munition to return to equilibrium, the mine is fully armed electronically. Disturbance of a tripline, or the mine itself, now triggers a switch which completes an electronic firing circuit. The S&A electric detonator initiates the S&A firing train which initiates a detonating cord which then initiates a thin layer of liquid propellant, which by gravity rests under the kill mechanism, shattering the plastic mine body and propelling the kill mechanism upwards from 6 inches to 8 feet above the ground where it detonates. The kill mechanism is a spheroid internally embossed and loaded with 21 grams of Comp A5 and when detonated, propels fragments in a high velocity spherical pattern.

If the mine is not activated by tripline or disturbance mode, a factory preset self-destruct feature initiates the mine in 4 hours plus 0-20 percent.

Tabulated Data:

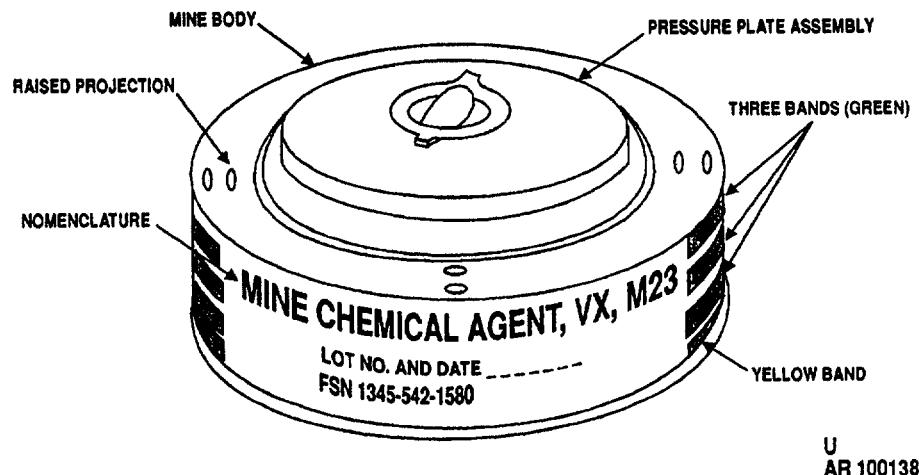
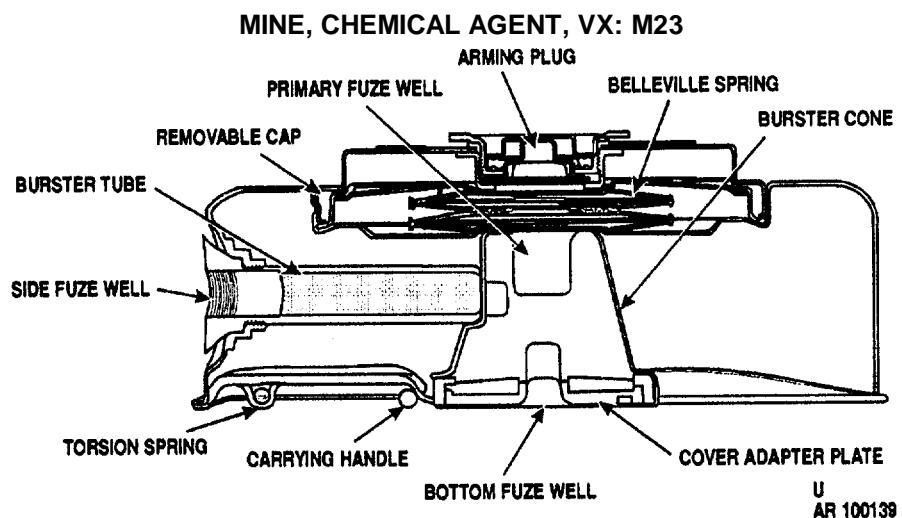
Model M86
 Type APERS, frag
 Dwg Assy 9366700
 Weight 1.2 lb, approx
 Dimensions:
 Height 3.203 in.
 Radius (max) 2.924 in.
 Thickness 72° wedge
 Material Plastic and steel
 Temperature Limits:
 Operational:
 Lower Limit -32C (-250F)
 Upper Limit +520C (+1250F)
 Storage:
 Lower Limit -46C (-50°F)
 Upper Limit +710C (+1600F)
 Shipping and Storage Data:

| | | Weight | |
|--------------------|-------------|---------|--------|
| Item | Type | AV | Metric |
| <u>M86 Mine:</u> | | | |
| | Main Charge | Comp A5 | 21 gr |
| <u>References:</u> | | | |
| TM 9-1345-203-12&P | | | |
| TM 9-1345-203-34&P | | | |

CHAPTER 4
CHEMICAL AGENT MINES

4-1

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Type Classification:

S 3710 (LCC-A)

Use:

The chemical mine M23 is used to disperse a nerve agent (VX) and may be used as an antitank or an antipersonnel mine.

Description:

The chemical agent mine is prefilled, and consists of a thin-walled, steel body which houses the pressure plate assembly, a primary fuze well, and two

secondary fuze wells. The pressure plate assembly contains the pressure plate, deflection spring, fuze retainer spring, and arming plug.

Functioning:

The M603 or M608 fuze is used in the primary fuze well when used as an antitank mine. When used as an antipersonnel mine, it is booby trapped by using an activator and a firing device in the side or bottom secondary fuze wells.

Tabulated Data:

nameAmmunition, toxic
DOT shipping classClass A Explosive
DOT marking.....EXPLOSIVE
MINES
DODAC1345-K257
PaintingGray
MarkingGreen

Explosive Data:

| Weight Item | Type | AV | Metric |
|---|----------|----------|----------|
| M603 Mine Fuze: | | | |
| M45 Det | PA #100 | 1.86 gr | 120 mg |
| | Lead Az | 4.25 gr | 275 mg |
| | RDX | 1.85 gr | 120 mg |
| M120 Booster | RDX | 172.4 gr | 11.18 mg |
| Main Charge | VX Agent | 10.5 lb | 4.76 kg |
| *M1 Activator: | | | |
| M31 Det | Army Ign | 2.31 gr | 150 mg |
| | Lead Az | 3.85 gr | 250 mg |
| | Tetryl | 4.17 gr | 270 mg |
| Booster | Tetryl | 36 gr | 2.3 gm |
| *If M1 activator used, additional explosive components will depend on type of firing device employed. | | | |
| Alternate Primary Fuze - if used: | | | |
| M608 Mine Fuze: | | | |
| M55 Det | NOL 130 | 0,23 gr | 15 mg |
| | RDX | 0.29 gr | 19 mg |
| | Lead Az | 0.79 gr | 51 mg |
| Lead | RDX | 3.33 gr | 207 mg |

Reference:

TM 9-1345-203-12&P

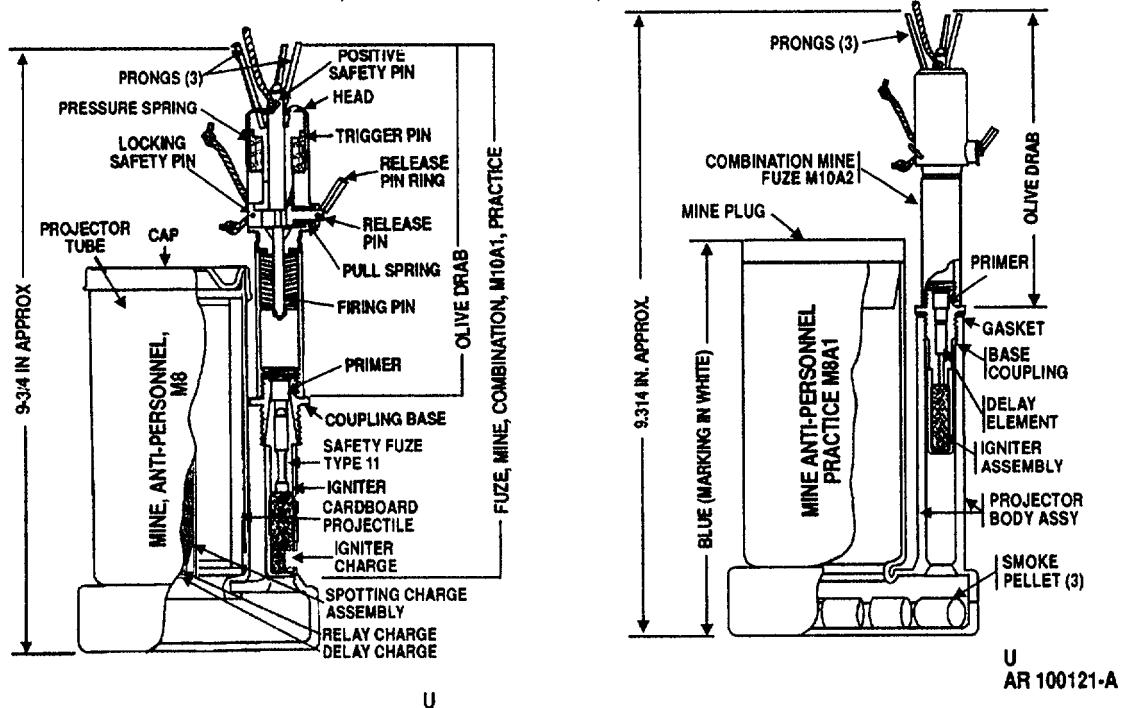
CHAPTER 5

**PRACTICE, INERT, TRAINING,
AND DUMMY ITEMS**

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MINE, ANTIPEOPLE, PRACTICE: M8 (M8A1)

MINE, ANTIPEOPLE, PRACTICE: M8 (M8A1)

Type Classification:

S 1747 (LCC-B)

Use:

The antipersonnel practice mines M8 and M8A1 simulate the M2 series of antipersonnel mines and are used for training in the proper methods and precautions to be observed in the care, handling, laying, booby trapping, arming, and disarming of the M2 and M15 series mines.

Description:

General. The metal parts of these mines are similar to those of service mine M2A4. The M8 mine uses a cardboard projectile containing a spotting charge. The M8A1 uses smoke pellets to indicate activation of the mine. These practice mines may be used many times by replacing the fuzes and separately requisitionable components. The M8 requires replacement of a mine cap (metal) and cardboard projectile which contains a spotting charge. The M8A1 requires replacement of a mine plug (polystyrene) and smoke pellets.

Difference between models. The M8 practice mine ejects a cardboard projectile containing a delay and a spotting charge of black powder which bursts in

the air. The M8A1 indicates functioning by emitting yellow smoke from the top of the main body. The practice mine M8 uses either fuze mine combination practice M10 or M10A1. The practice mine M8A1 uses the M10A2 fuze.

Functioning:

Mine M8 with Fuze M10 or M10A. The fuze firing mechanism is activated by an applied load of 8 to 20 pounds on any of the prongs or by a pull of 3 to 10 pounds of the trip wire. The fuze firing train ignites the delay element in the projectile and also propels it about 2 meters into the air. The delay initiates the spotting charge which explodes with a loud report and emits smoke.

Mine M8A1 with Fuze M10A2. The fuze firing mechanism is activated by an applied load of 8 to 20 pounds on any of the prongs or by a pull of 3 to 10 pounds of the trip wire. The fuze firing train ignites the yellow smoke pellets through a 4 to 5 second delay. The plastic plug is propelled in the air allowing the yellow smoke to be emitted from top of container.

Tabulated Data:

Model numberM8, M8A1
 TypePractice, APERS
 Drawings:
 Assembly:
 M882-0-112
 M8A18862037
 Weight4.5 lb
 Dimensions - fuzed:
 Height9.75 in.
 Max diam4.03 in.
 MaterialSteel
 Thread - fuze well0.563-12UNC-1A
 Fuze (see separate
 write-up):
 M8M10, M10A1
 M8A1M10A2
 Shipping and Storage Data:
 Packing arrangement2 mines w/2 fuzes
& 20 sets repl parts
in wooden box
 Weight371b
 Dimensions16-1/2 x 11-1/2 x
13-3/4 in.
 Cube1.51 cu ft
 Hazard class/division and
 storage compatibility
 group(04) 1.2G
 UNO serial number0313
 UNO Proper shipping
 name Signals, smoke
 DOT shipping classClass C Explosive
 DOT markingPERCUSSION

FUZES HANDLE
 CAREFULLY
 DODAC1345-K105
 PaintingBlue
 MarkingWhite

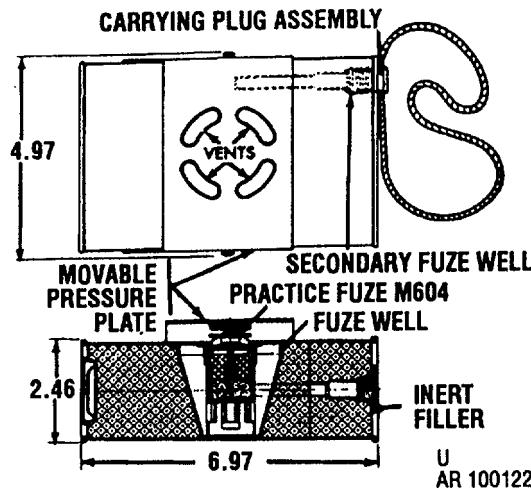
Explosive Data:

| Item | Type | Weight | |
|--------------------|------------|----------|----------|
| | | AV | Metric |
| M10 Fuze: | | | |
| Mk V Primer | Prim Mix | 0.4 gr | 26 mg |
| 4.5" Delay | Safe Fuse | | |
| Igniter | Bik Pdr | 14.98 gr | 972 mg |
| M10A1 Fuze: | | | |
| M39A1 Prim | Prim Mix | 0.4 gr | 26 mg |
| 4.5" Delay | Safe Fuse | | |
| Igniter | Blk Pdr | 14.98 gr | 972 mg |
| M10A2 Fuze: | | | |
| M39A1 Prim | Prim Mix | 0.4 gr | 26 mg |
| Delay | Tpl Comp | 1.5 gr | 100 mg |
| Delay | TpIII Comp | 10 gr | 650 mg |
| Igniter | Smk Comp | 11.2 gr | 725 mg |
| M8 Mine: | | | |
| Delay | Bik Pdr | 0.57 gr | 37 mg |
| Relay | Blk Pdr | 0.77 gr | 50 mg |
| Spot Chg | Blk Pdr | 170 gr | 11.02 gm |
| M8A1 Mine: | | | |
| Spot Chg | Yel Smk | 92.7 gr | 6 gm |

Reference:

TM 9-1345-203-12&P

MINE, ANTITANK, PRACTICE, LIGHT: M10

**Type Classification:**

OBS 11756003

Use:

The antitank practice mine M10 simulates the M7 series of light, inert, antitank mines and is used for training in the proper methods and precautions to be observed in the care, handling, laying, booby trapping, arming, and disarming of high explosive service antitank mines.

Description:

The antitank practice mine M10 consists of a rectangular, steel container, shipped empty, and is loaded with sand in the field. A primary fuze well for the practice fuze M604 is located in the top center of the mine. The smoke charge is contained in the fuze. A secondary fuze well is provided in one end of the mine for insertion of a secondary fuze for booby trapping purposes. It is taped to take any 9/16-inch threaded firing device, such as the M1 or M2, and closed with a plug to which the mine carrying cord is attached. The sand loading port is closed with a twist lock cap, supplied separately. The M10 practice mine is inert except for primer and smoke charges in the primary fuze and small charges in secondary fuze firing devices, when used. The practice fuze M604 is mounted in the top of the mine and covered by the movable striker plate of the mine and is directly activated by an external force of 120 to 240 pounds. The M10 practice mine is booby trapped with a regular firing device threaded directly into the secondary fuze well. No igniter charge or blasting cap should be used in the firing device. Practice mine M10 is activated by a force of 120 to 240

pounds on the striker plate. This force acts directly on the practice fuze M604. Functioning of the fuze ignites a smoke charge, which emits a cloud of smoke and creates a noise. When booby trapped, the mine is activated by a pull wire. Functioning of the firing device indicates activation of the mine.

Tabulated Data:

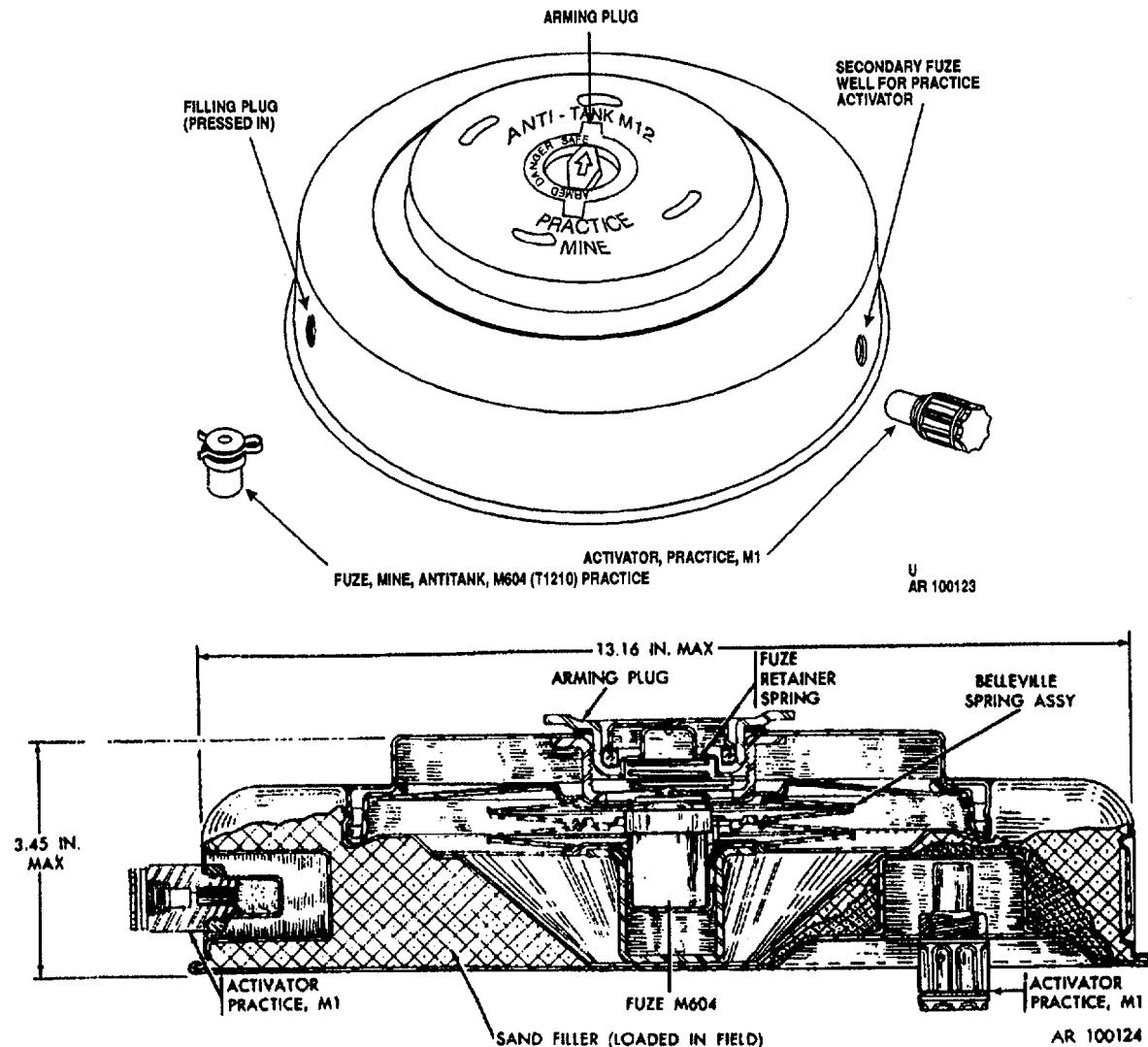
| | |
|----------------------------|-------------------------------------|
| Model number | M10 |
| Type | AT, Practice |
| Drawings: | |
| Assembly..... | 82-0-156 |
| Weight - fuzed & | |
| ballasted..... | 8.2 lb |
| Dimensions: | |
| Body | 2-1/2 x 5 x 7 in. |
| Material | Steel |
| Thread: | |
| Primary fuze well..... | None |
| Secondary fuze well | 0.563-12 NC |
| Fuzes (see separate | |
| write-up) | M604 Practice |
| Shipping and Storage Data: | |
| Packing arrangement | 12 mines w/o fuzes in wooden box |
| Weight..... | 68 lb |
| Dimensions | 21 x 11-3/4 x 9-1/2 in. |
| Cube | 1.36 cu ft |
| DODAC | 1345-K220 |
| Painting | Blue |
| Marking | White |
| Special Performance Data-- | N/A |

Explosive Data:

Reference:
TM 9-1345-203-12&P

| Item | Type | Weight | |
|-------------------|----------|----------|--------|
| | | AV | Metric |
| M604 Fuze: | | | |
| M45 Prim | PA #100 | 1.62 gr | 105 mg |
| | Blk Pdr | 2.95 gr | 192 mg |
| Smoke Chg | Smk Comp | 262.3 gr | 17 gm |

MINE, ANTITANK, PRACTICE: M12 SERIES

Type Classification:

C 6558 (LCC-S)

Use:

The antitank practice mine M12 (M12A1, M12B1) is used for training personnel in the precautions and proper methods to be observed in the care, handling, laying and arming, booby trapping, and disarming of the high explosive heavy antitank mine M15.

Description:

The M12 practice mine is a flat, cylindrical, steel casing externally similar to the high explosive mine M15. The mine is shipped empty, with arming plug M4 assembled over the primary fuze well, but without primary or secondary fuses. It is to be loaded with sand

and fuzed in the field. The mine is inert, but explosive components will be found in the primary fuze, and if used, in the secondary fuze and activator. The arming plug has a steel shutter which moves from a side position to a center position as the setting knob is moved from SAFE through DANGER to ARMED position. The words are appropriately color coded, green, green/red, red respectively. A wire carrying handle is provided.

Functioning:

Practice mine M12 is activated by a force of 565 ± 174 pounds on the pressure plate of the mine. This force overcomes both mine and fuze spring systems. Functioning of the practice fuze M604 ignites a smoke charge which emits

a cloud of smoke and creates a noise. When booby trapped, the mine may be functioned by a pull or by release of trip wires attached to either of the secondary fuzes. Functioning of the secondary fuzes ignites a small smoke charge in the M1 practice activator.

Tabulated Data:

Model number M12, M12A1 or
M12B1
Type Practice, AT
Drawings:
 Assembly (M12A1) 82-0-136
Weight 20 lb
Dimensions:
 Height 3.5 in.
 Max diam 13.25 in.
Material Steel
Thread:
 Arming plug well 2.313-14 NS-1
 Secondary fuze well 0.688-12 NS
Fuzes (see separate
 write-up) M604 practice
Shipping and Storage Data:
Packing arrangement:
M12 or M12A1 2 mines w/o fuzes/
 wooden box
Weight 38.8 lb

Dimensions 17-1/2 x 16 x 9-3/4
in.
Cube 1.56 cu ft
M12 or M12B1 1 mine w/o fuze/
 mtl cntr
Weight 18.91b
Dimensions 14 x 13-3/4 x 4-1/8
in.
Cube 0.46 cu ft
Quantity-distance class N/A
DODAC 1345-K230
Painting Blue
Marking White

Explosive Data:

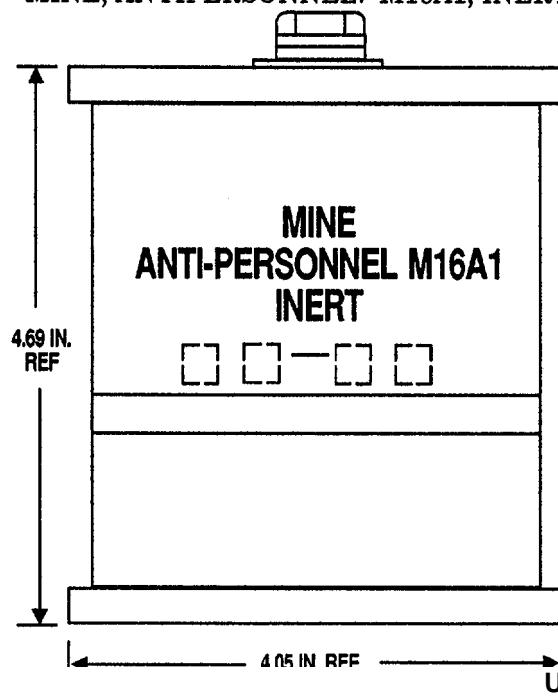
| Item | Type | Weight | |
|---------------------|---------|----------|--------|
| | | AV | Metric |
| M604 Practice Fuze: | | | |
| M45 Primer | PA #100 | 1.62 gr | 105 mg |
| | Blk Pdr | 2.96 gr | 192 mg |
| Smk Comp | | 262.3 gr | 17 gm |

Reference:

TM 9-1345-203-12&P

MINE, ANTI PERSONNEL: M16A1, INERT

MINE, ANTI PERSONNEL: M16A1, INERT



AR 101909-A

Type Classification:

12816009 (LCC-B)

Use:

This mine is used for training purposes only. It uses the M605 Inert Fuze and contains no explosive components. Since the dimensions are the same as the live M16A1 mine, care must be exercised not to use live components with it.

Tabulated Data:

Model number M16A1, Inert

Type Training

Drawings:

Assembly 9324631

Box, fiber packing..... 8863609

Box, wirebound..... 7548179

For additional pertinent details (including weight, dimensions, material, thread, fuze, temperature limits, shipping and storage data) see page 3-10.

| | |
|----------------|--|
| Painting | Blue |
| Marking | White |
| DODAC | Not listed - Parts packed under NSN 1345-00-799-7391 |

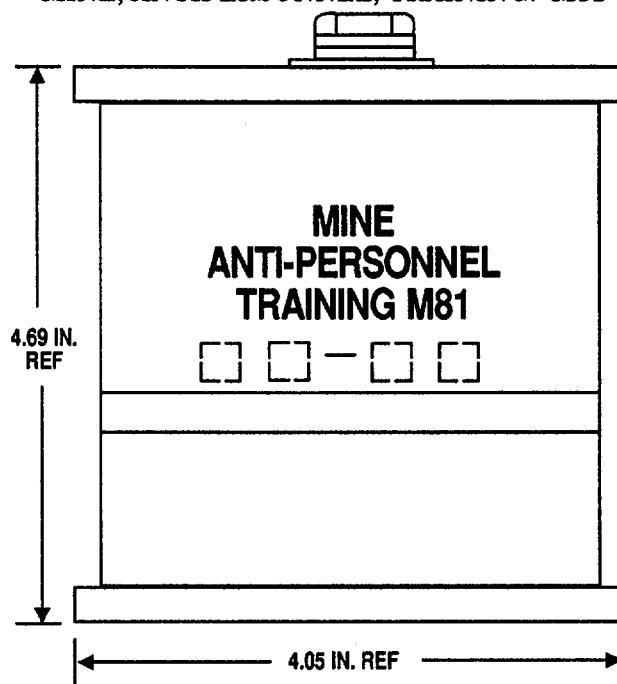
Reference:

TM 9-1345-203-12&P

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MINE, ANTIPERSONNEL, TRAINING: M81

MINE, ANTIPERSONNEL, TRAINING: M81

Type Classification:

12816001 (LCC-A)

Use:

This mine is used for training purposes only. It uses the M605 Inert Fuze and contains no explosive components. Since the dimensions are the same as the live M16A1 mine, care must be exercised not to use live components with it.

Tabulated Data:

Model number M81, Training

Type Training

Drawings:

Assembly 9332440

Box, fiber packing 8863609

Box, wirebound 7548179

For additional pertinent details (including weight, dimensions, material, thread, fuze, temperature limits, shipping and storage data) see page 3-10.

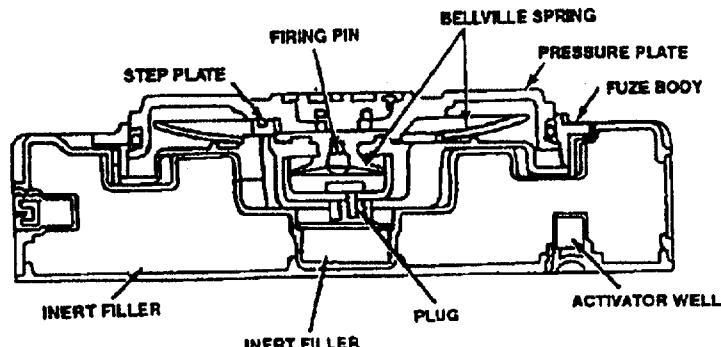
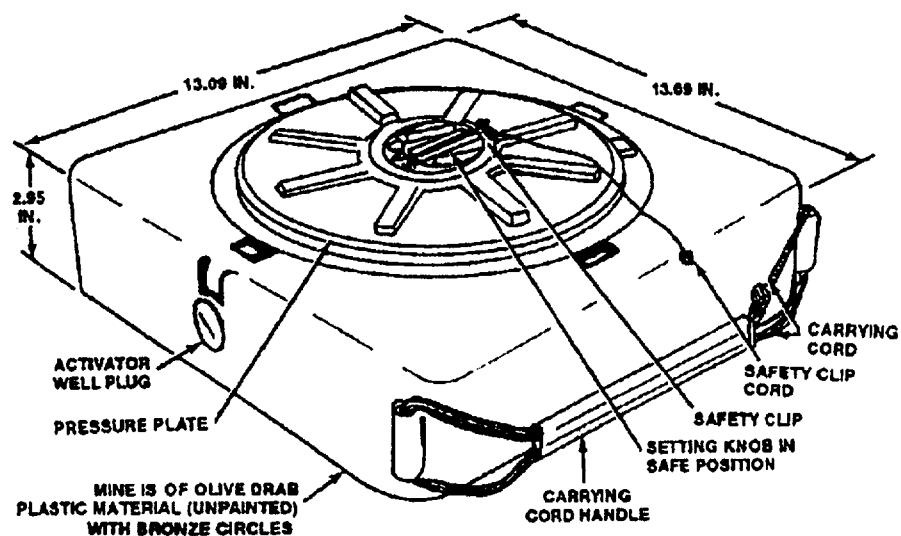
| | | |
|----------|-------|------------------|
| Painting | | Bronze |
| Marking | | White |
| DODAC | | Not listed |
| NSN | | 6920-01-136-3628 |

Reference:

TM 9-1345-203-12&P

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MINE, ANTITANK: TRAINING, M80



AR 100134-A

NOTE

The threading of the secondary fuze wells will therefore accept the M1 or M2 activators, which should never be used. Use only the M1 practice activator, despite the lack of good fit.

Functioning:

There is not explosive functioning of the mine. The mine can be set on Safe or Armed by the setting knob, and the safety clip can be removed and replaced.

Tabulated Data:

| | |
|--------------------|--------------|
| Model number | M80 |
| Type | AT, Training |
| Drawings: | |
| Assembly..... | 9321449 |
| Metal parts | 9321447 |

Weight-fuzedApprox 28 lb

Dimensions:

Height 3.7 in.(w/M606
Fuze)

Max diam 13.09 in.

MaterialPlastic

Thread:

M606 Inert Fuze (deto-
nator holder well)0.563-12UNC-1A
Secondary fuze well0.75-UNS-1B

Fuze (see separate
write-up)M606, Inert

Temperature LimitsN/A

Shipping and Storage Data:

Packing & marking for
box9321541

Box, wirebound,
packing9321540

DODAC1345-K232

PaintingAll Bronze or OD
w/Bronze (Copper)
Colored Circles

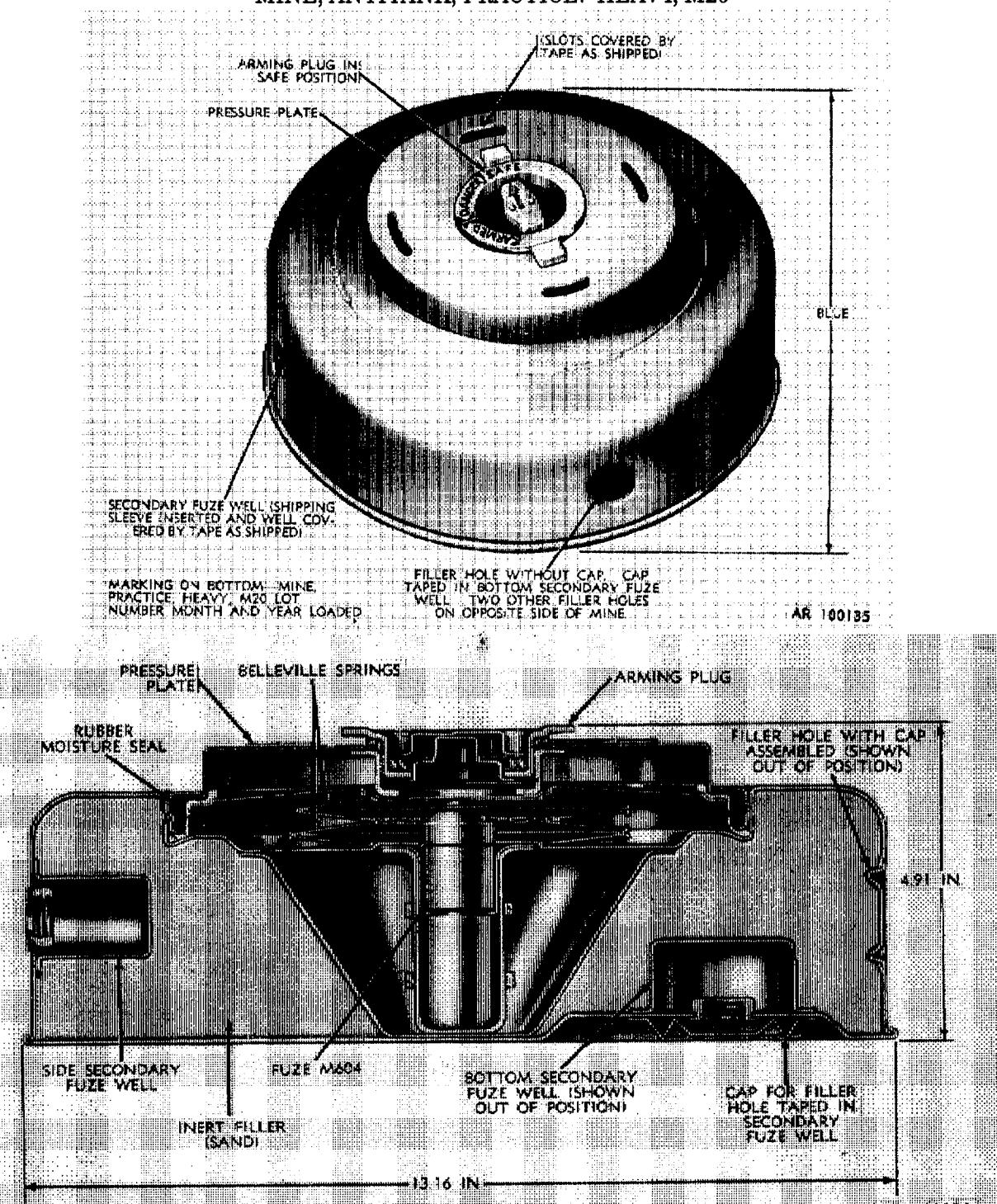
MarkingWhite

Reference:

TM 9-1345-203-12&P

MINE, ANTITANK, PRACTICE: HEAVY, M20

MINE, ANTITANK, PRACTICE: HEAVY, M20

Type Classification:

S 36841 (LCC-A)

Use:

Practice mine M20 is used for training personnel in the proper methods and precautions to be observed in the care, handling, laying and

arming, booby trapping, and disarming of the high explosive, heavy, antitank mine M15.

Description:

The M20 mine has a squat cylindrical steel casing, externally similar to the high explosive mine M15, but differs by having three filler holes around its periphery, and perforations around the arming plug and secondary fuzing wells, indicative of inert status. The mine is issued empty, with arming plug M4 assembled, but lacking either primary or secondary fuze. It is to be loaded with sand and fuzed in the field. The mine is inert except for the smoke charge and M45 primer in the M604 fuze, the smoke charge primer in the M1 practice activator, and the primer in the secondary fuzing device. The primary fuze is the fuze M604. The secondary fuze wells will accept practice antitank mine activator M1 and any firing device having 9/16 inch threading. A wire carrying handle is provided. The mine, with M604 fuze, is activated by the weight of an intermediate or heavy tank. Lighter equipment or personnel will not overcome the spring system of the mine and actuate the fuze.

Functioning:

Practice mine M20 is activated by a force of 565 ± 174 pounds, which is sufficient to overcome both spring systems, that in the mine, and that in the M604 fuze. Although intended for interdiction of medium or heavy tanks, the mine can be functioned, when booby trapped, by pull or release, of either of two trip wires attached to a secondary firing device. The activation of the primary fuze or either of the secondary fuzes releases a cloud or smoke and creates a noise, indicative of mine functioning.

Tabulated Data:

| | |
|------------------------------------|---------------------------------------|
| Model number | M20 |
| Type | Pract, Heavy, AT |
| Drawings: | |
| Assembly..... | 7548124 |
| Weight-fuzed & ballasted | 31.46 lb |
| Dimensions: | |
| Height..... | 4.91 in. |
| Max diam | 13.16 in. |
| Material | Steel |
| Thread: | |
| Arming plug..... | 2.313-14 NS-1A |
| Second fuze well | 0.688-12 NC |
| Fuze (see separate write-up) | |
|M604 | |
| Shipping and Storage Data: | |
| Packing arrangement | 3 mines w/arming wrench in wooden box |
| Weight..... | 50.4 lb |
| Dimensions | 17-5/8 x 16-1/8 x 17-1/2 in. |
| Cube | 2.5 cu ft |
| Quantity-distance class..... | N/A |
| DODAC | 1345-K231 |
| Painting | Blue |
| Marking | White |

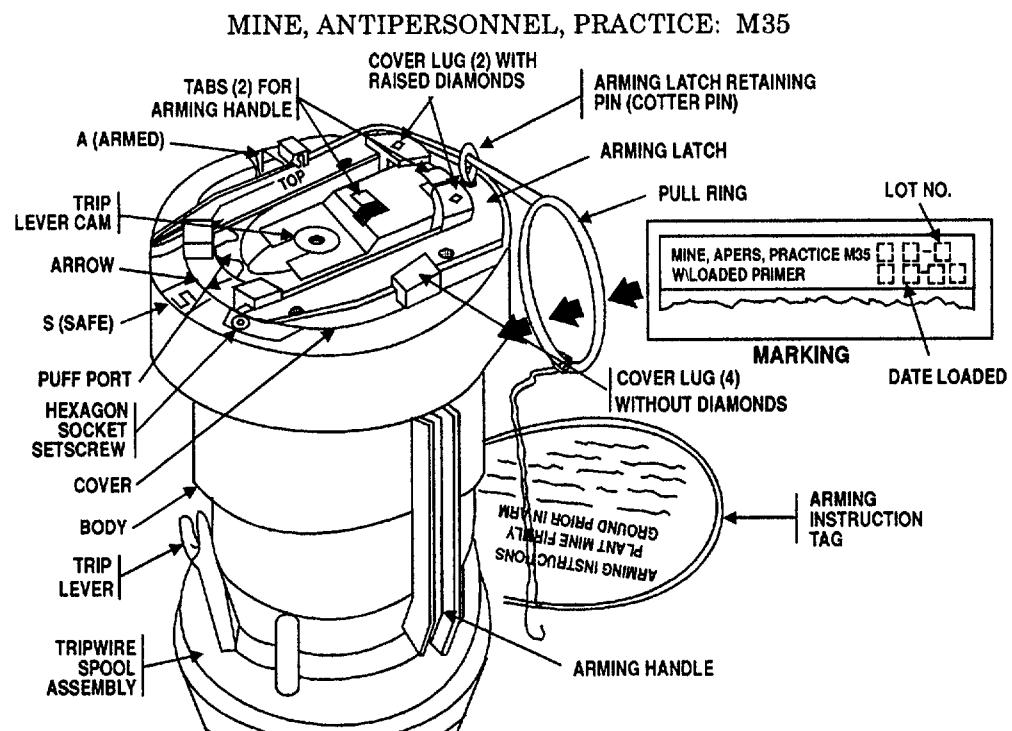
Explosive Data:

| Item | Type | Weight | |
|------------------------------------|------------|----------|----------|
| | | AV | Metric |
| M604 Fuze: | | | |
| M45 Primer | PA #100 | 1.5 gr | 105 mg |
| | Blk Pdr | 2.96 gr | 192 mg |
| Smk Chg | Smk Comp | 262.3 gr | 17 gm |
| M1 Practice Activator (when used): | | | |
| Photo-fish | TP III C1A | 2.34 gr | 151.5 mg |
| Quickmatch | TP II C1A | | |
| Smk Chg | Smk Comp | 20 gr | 1.4 gm |

Reference:

TM 9-1345-203-12&P

MINE, ANTI PERSONNEL, PRACTICE: M35

Type Classification:

OBS 11846007

Use:

The M35 practice mine is used to indoctrinate trainees in the proper handling, emplacement, arming and disarming techniques required for emplacement of the antipersonnel service mine M26.

Description:

The M35 practice mine is similar to the M26 mine with the following exceptions:

External - color and markings, presence of a puff port in the cover and a hexagonal socket setscrew instead of a cover locking pin.

Internal - dye capsule, simulator and panel assembly, cartridge case and sleeve assembly, spring housing retainer and spring housing assembly.

The M35 practice mine is reusable and is expected to be reloaded at least 15 times before requiring repairs. Attached to, but easily removable from the mine are the following accessories: Arming Handle, Arming Instruction Tag, Trip Lever, and Spool Assembly. Four 20-foot tripwires, two colored olive drab and two tan, are stored on the spool.

Functioning:

After arming, and removal of the arming latch, a weight of 14 to 28 pounds on the mine top or a pull on the assembled top lever will function the 32 caliber cartridge case. The hot gases puncture the dye capsule and cause the blue dye powder to be expelled in a discernable plume. The mine may be rigged for tripwire activation. Remove the trip lever from storage in the spool assembly and insert in the threaded well in the cam, top, center. Attach one or more of the trip wires, as required.

Tabulated Data:

| | |
|--------------------|----------------|
| Model number | M35 |
| Type | Practice, AP |
| Drawings: | |
| Assembly..... | 9212294 |
| Weight | 2.2 lb |
| Dimensions: | |
| Height..... | 5.7 in. |
| Max diam | 3.1 in. |
| Material | Aluminum/Steel |
| Fuze | integral) |

Shipping and Storage Data:

Packing arrangement 3 mines w/acc 3/fbr
 ctn, 6 ctns (18
 mines) wooden box

Weight 60 lb

Dimensions 21-1/4 x 12-1/2 x
 9-3/4 in.

Cube 1.5 cu ft

Hazard class/division and
 storage compatibility
 group 1.4G

UNO serial number 0317

UNO Proper shipping
 name Mines

DOT shipping class Class C Explosive

DOT marking PERCUSSION

FUZES HANDLE
 CAREFULLY
 DODAC 1345-K106
 Painting Blue
 Marking White

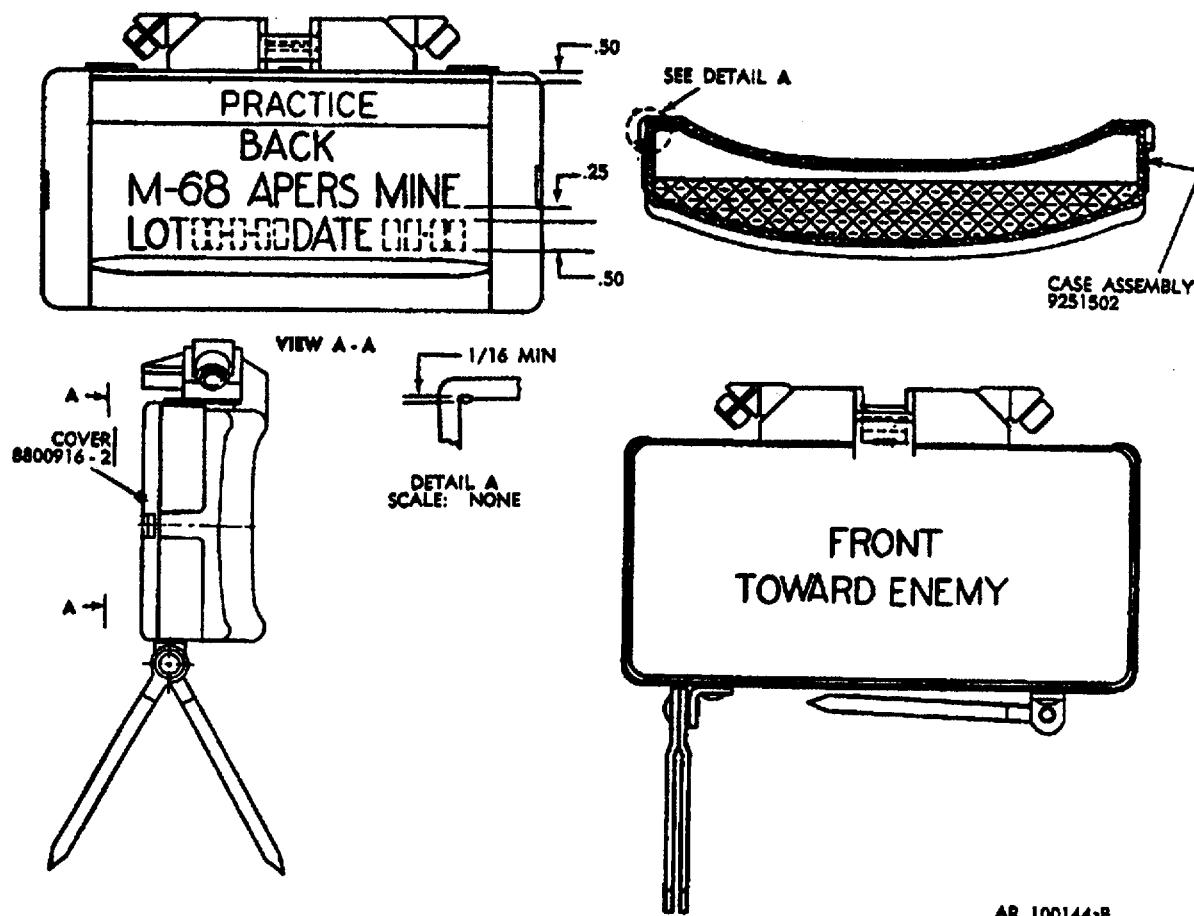
Explosive Data:

| Item | Type | AV | Weight |
|------------|-----------|--------|--------|
| 32 Caliber | Cartridge | | |
| Primer | | 1.5 gr | 105 mg |

Reference:

TM 9-1345-203-12&P

MINE, ANTI PERSONNEL, PRACTICE: M68

Type Classification:

S 8880 (LCC-A)

Use:

The M68 practice mine simulates the M18 series mines, and is used for training in the proper methods and precautions to be observed in the care and handling, booby trapping, arming, and disarming of high explosive service antipersonnel mines.

Description:

The practice mine body M33 is included in a kit designated Mine, APERS, Practice, M68, which also includes the M10 practice blasting cap, the M57 firing

device and the M40 test set, all packed in the M7 bandoleer. The external appearance of the M33 practice mine is identical to the M18A1 except for color and marking. An inert filler replaces the high explosive. The M57 firing device, M7 bandoleer, and the M40 test set are the same as used with M18A1 mine. The M10 blasting cap is inert. The lead wires of the M10 are shorted to provide electrical continuity.

Functioning:

The only components of the item that function are the M57 firing device and the M40 test set. There is no explosive functioning.

Tabulated Data:

Shipping and Storage Data:

Packing arrangement 1 mine, 1 cap, 1 firing device, 1 test set per bandoleer, 6 bandoleers per wooden box (6 mines)

Dimensions 15-1/4 x 10-1/2 x
14-3/8 in.

Cube 1.4 cu ft

Weight 0.53 lb

DODAC 1345-K139
Revised Bl. C with

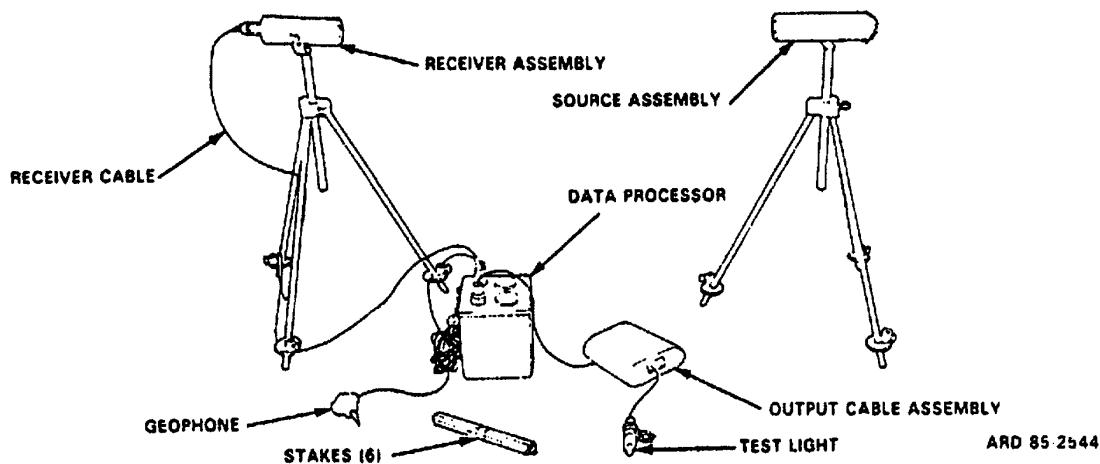
Painting

blue stripes
Multi-
White

Reference:

None

MINE, ANTITANK, PRACTICE: M69

Type Classification:

OBS 03866007

(Has not been produced and is not in field)

Use:

The M69 practice antitank mine is used for training personnel in the precautions and proper methods to be observed in the care, handling, laying, and disarming of the M66 off-route antitank mine.

Description:

The practice mine M69 differs from the M66 mine, which it simulates, in that the lethal mechanism, the HE rocket, is replaced by a rocket having an inert warhead M29A2. The other components of the mine are identical to the M66 mine.

Tabulated Data:

Model number M69

Type Off-route, Practice,
AT

Drawings:

Assembly 9256479

Weight:

Total 40 lb

Rocket only 9 lb

Dimensions:

Rocket:

Length 23.55 in

Max diam 3.5 in.

Materials:

Rocket:

Motor Steel

Warhead Cast iron

Rocket launcher Plastic

IR Source Aluminum

IR Receiver Aluminum
Data Processor Aluminum
Geophone Plastic/Steel

Fuzes:

System M619
Type Electronic
Rocket M405A2
Type Mech-inert

Battery types (not included):

2 - req'd for Data Proc BA-3202/U
1 - req'd for Data Proc BA-1114/U
1 - req'd for IR Source BA-1114/U

Temperature Limits:

Firing:
Lower -40°F
Upper +125°F

Shipping and Storage Data:

Packing arrangement 1 mine M69 w/fuze
M619 barrier bag/
wirebound box

Weight 70 lb
Dimensions 33-3/4 x 22-7/8 x
12-5/8 in.

Cube 5.4 cu ft

Hazard class/division and
storage compatibility
group (12) 1.2F

UNO serial number-----
DOT shipping class ----- Class C Explosive
DOT marking ----- ROCKET

AMMUNITION
W/INERT
LOADED
PROJECTILE

DODAC 1345-K233

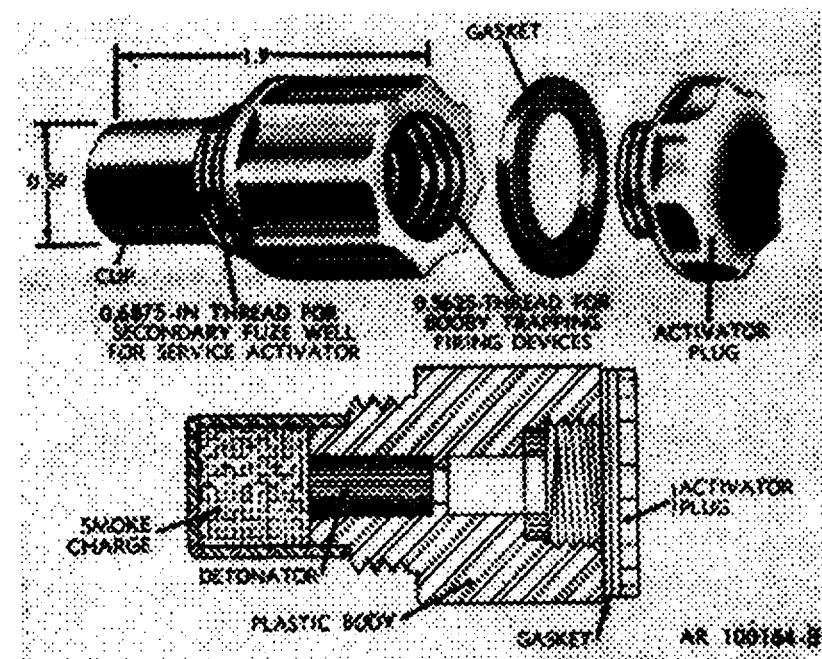
Painting:
Rocket Blue

Marking:
Rocket White

Explosive Data:

| Item | Type | AV | Weight | | <u>Reference:</u> |
|---------------------|-----------|---------|--------|---------|-------------------|
| | | | Metric | English | |
| M29A2 Rocket Motor: | | | | | None |
| M2 Elec Squib | Flash Pdr | 1 gr | 65 mg | | |
| Igniter | Blk Pdr | 54 r | 3.5 gm | | |
| Propellant | M7 | 0.35 lb | 159 gm | | |

ACTIVATOR, ANTITANK MINE: PRACTICE, M1

Type Classification:

S 36841 (LCC-A)

Use:

This activator is used to adapt any inert, antitank practice mine having 11/16-inch threaded secondary fuze wells to the use of a practice booby trapping firing device.

Description:

The practice activator is made of black plastic (newer type, blue) and has a threaded closing plug and gasket. The body is internally threaded to receive a firing device. The other end is externally threaded. The body contains a igniting charge and the cylindrical unthreaded cup end (color blue) contains the smoke charge.

Functioning:

This activator operates when the action of a firing device initiates the igniter charge which, in turn, ignites the smoke charge, thus releasing a puff of white smoke with accompanying noise.

Tabulated Data:

| | |
|----------------------------|--|
| Model number | M1 |
| Type | Practice |
| Weight | 17 gm |
| Length | 1.99 in. |
| Material | Plastic |
| Threading: | |
| External..... | 0.6875-12NS-SPEC |
| Internal..... | 0.5625-12-NC-SPEC |
| Drawings: | |
| Assembly..... | 73-9-46 |
| Parts | 73-9-47 |
| Temperature Limits: | |
| Firing: | |
| Lower..... | 40°F |
| Upper | +125°F |
| Storage: | |
| Lower..... | -60°F |
| Upper | +160°F |
| Shipping and Storage Data: | |
| Packing arrangement | 180 activators - 1 per metal container 180 containers in wooden box |

Container:
 Weight.....54.5 lb
 Dimensions16-3/4 x 14-13/16 x
16-3/8 in.
 Cube2.3 cu ft

Hazard class/division and
 storage compatibility
 group1.4S

UNO serial number0349

UNO Proper shipping
 nameArticles, explosive

DOT shipping classClass C Explosive

DOT markingPERCUSSION
FUZES HANDLE
CAREFULLY

DODAC1345-K002

Painting*Black & Blue

MarkingN/A
 *Newer models, all blue

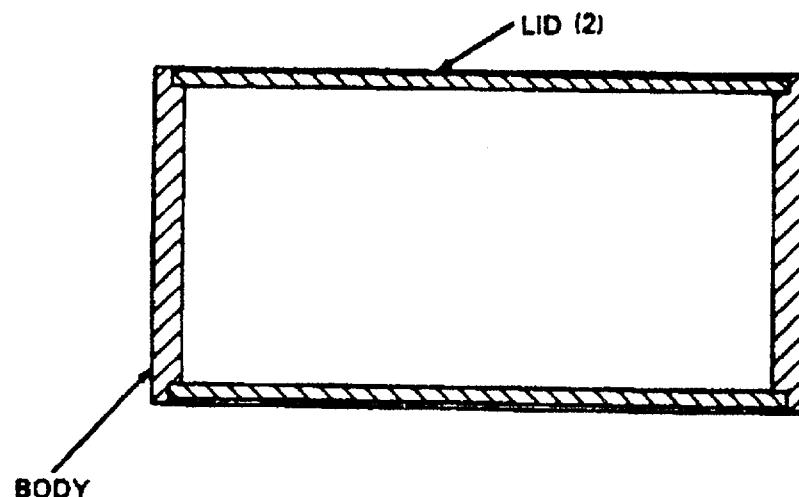
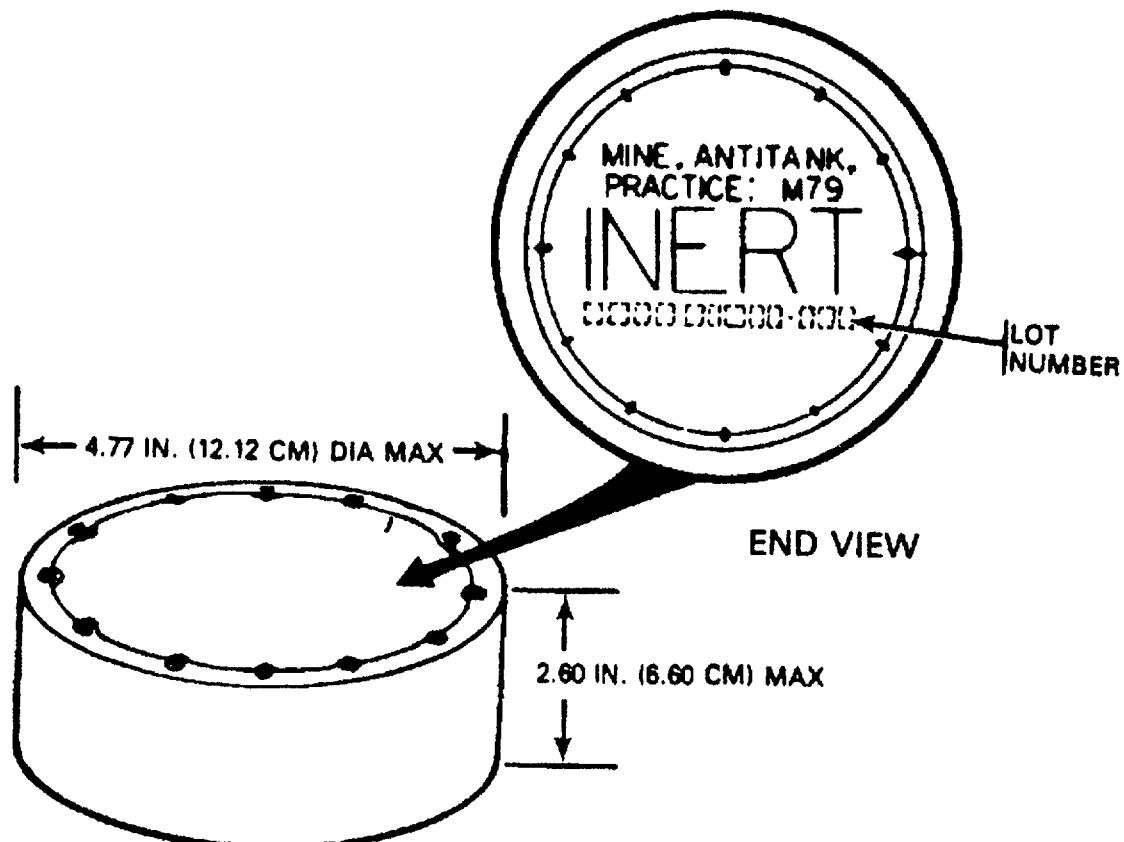
Explosive Data:

| Item | Type | Weight | |
|----------------------|-------------|---------|----------|
| | | AV | Metric |
| Igniter: | | | |
| Flash Pdr | Tp III C1 A | 2.34 gr | 151.5 mg |
| Fuze, quick match | Tp II C1 A | | |
| Smk Chg | Smk Comp | 20 gr | 1296 mg |

Reference:

TM 9-1345-203-12&P

MINE, ANTITANK, PRACTICE: M79



ARD 84-1700

Type Classification:

STD-LCC-A (LET 4-11-80, ARDC)

Use:

The practice antitank mine M79 simulates the HE antipersonnel mine M74 and the HE antitank mine M75 and is used for training purposes. The mine is emplaced by the ground vehicle mine dispenser M128.

Description:

The mine is cylindrical in shape, and is similar in appearance to the antipersonnel mine M74 and the antitank mine M75. The mine is inert and it is fabricated of thick-wall steel tubing with a sheet metal closure lid staked in each end. The mines are shipped and stored in a sealed, desiccated container.. The container holds 8 sleeves, each containing 5 mines, for a total of 40 mines per container. The containers are palletized, with six containers per pallet.

Functioning:

There is no explosive functioning of this mine.

Tabulated Data:

Mine, Antitank, Practice: M79:

| | |
|-------------------------------------|-------------------------|
| Painting..... | Blue |
| Marking..... | White |
| Height (max) | 2.60 in. (6.60 cm) |
| Diameter (max) | 4.77 in. (12.12 cm) |
| Weight..... | 3.55 lb (1.61 kg) |
| Material | Steel tubing |
| Operational Temperature Limits..... | Not applicable |
| Explosive weight per mine | None (inert) |
| Physical security category | Nonsensitive |
| DODAC | 1345-K234 |
| Packing arrangement | 5 mines per sleeve |
| | 8 sleeves per container |
| | 6 containers per pallet |
| NSN | 1345-01-074-9370 |
| Shipping and Storage | |

Container - EMPTY:

| | |
|--------------|---------------------------|
| Length..... | 27.30 in. (69.30 cm) |
| Width | 14.10 in. (35.81 cm) |
| Height..... | 15.20 in. (38.61 cm) |
| Weight..... | 55.0 lb (25.0 kg) |
| Cube | 3.40 cu ft (0.10 cu m) |
| NSN | 8140-01-089-2763 |
| Part No..... | 9313655 |

Shipping and Storage**Container - LOADED:**

| | |
|-----------------------------------|--------------------|
| Weight..... | 214.0 lb (97.1 kg) |
| Storage compatibility group | Inert |

| | |
|--|----------------|
| Quantity-distance class for depot storage..... | Not applicable |
| Quantity-distance class for field storage..... | Not applicable |

| | |
|--------------------------|------------------------------|
| DOT shipping class | Not applicable |
| DOT markings | AMMUNITION, NON-EXPLOSIVE |

| | |
|-------------------------------------|------------------------------|
| US Coast Guard classification | AMMUNITION, NON-EXPLOSIVE |
| Shelf life..... | Indefinite |

Storage Temperature

| | |
|--------------|----------------|
| Limits | Not applicable |
|--------------|----------------|

Sleeve (empty):

| | |
|-------------|----------------------|
| Color | Green |
| Length..... | 24.48 in. (62.18 cm) |
| Width | 5.63 in. (14.30 cm) |
| Height..... | 3.50 in. (8.89 cm) |

| | |
|-------------|-------------------|
| Weight..... | 2.12 lb (0.96 kg) |
|-------------|-------------------|

Pallet (loaded w/full containers):

| | |
|---------------------------------------|----------------------------|
| Length..... | 55.50 in. (140.97 cm) |
| Width | 43.00 in. (109.22 cm) |
| Height..... | 23.13 in. (58.75 cm) |
| Weight (approx incl dunnage) | 1465 lb (665 kg) |
| Cube | 31.93 cu ft (0.90 cu m) |

References:

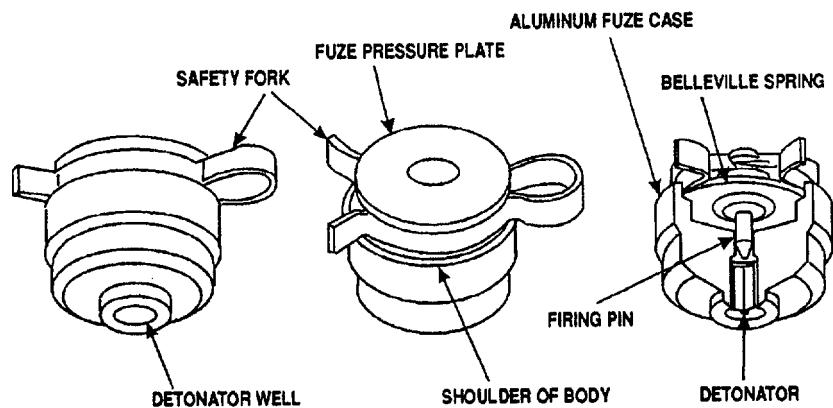
TM 9-1345-210-23&P

TM 9-1095-205-10

SC 1340/98-IL

FUZE, MINE, ANTITANK: M603, INERT

FUZE, MINE, ANTITANK: M603, INERT

Type Classification:

S 36841 (LCC-A)

Use:

The M603 inert fuze is an instantaneous, mechanical, pressure-type fuze used with the inert or empty light antitank M7 series mine.

Description:

The M603 inert fuze body contains a firing pin assembly, a cover assembly, a safety fork (clip). The firing pin is actuated by a belleville spring.

Functioning:

A load of 140 to 240 pounds is required to depress the belleville spring and cause it to snap into reverse, driving the firing pin into the dummy detonator. When assembled to the mine M7A2, this activating force is received directly from the movable pressure plate of the mine. No visible or audible functioning signal is provided.

Tabulated Data:

Model number M603 inert
 Type AT, mech, inert

| | |
|---|---|
| Drawings: | |
| Metal parts | 73-9-55C |
| Weight | 1.52 oz |
| Dimensions: | |
| Height..... | 1.17 in. |
| Max diam | 1.14 in. |
| Material | Aluminum and Steel |
| Thread | None |
| Temperature Limits | N/A |
| Shipping and Storage Data: | |
| Packing | Not packed separately. Available with M7A2 empty or inert mines. (10 sets in metal box) |
| Hazard class/division and storage compatibility group | |
| UNO serial number..... | |
| DOT shipping class | |
| DOT marking..... | |
| DODAC | 1345-K210 |
| Painting | Unpainted |
| Marking | Metal stamped |
| Special Performance Data | N/A |

Reference:

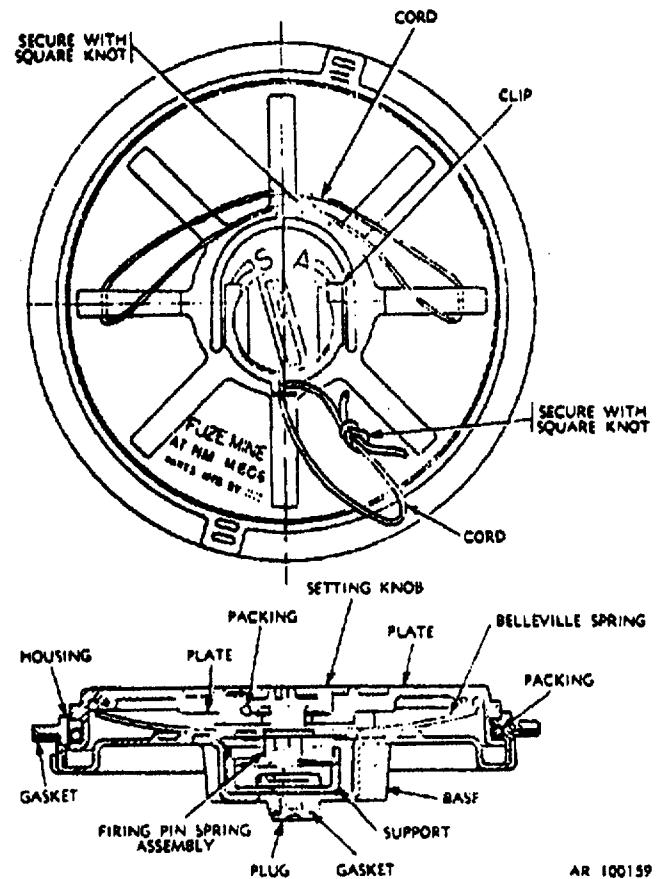
TM 9-1345-203-12&P

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Explosive Data:

| Item | Type | AV | Weight | Metric | Reference: |
|------------|----------|----------|--------|--------|--------------------|
| <hr/> | | | | | |
| M604 Fuze: | | | | | TM 9-1345-203-12&P |
| M45 Primer | PA #100 | 1.62 gr | 105 mg | | |
| | Blk Pdr | 2.96 gr | 192 mg | | |
| Smk Chg | Smk Comp | 262.3 gr | 17 gm | | |

FUZE: M606, INERT



AR 100159

Type Classification:

S 11756003 (LCC-A)

Use:

M606 inert fuze is used with Mine Antitank, Training, M80.

Description:

M606 inert fuze is identical to the M606 service fuze, except that it contains no explosives. The fuze body contains a pressure plate, a belleville spring, a setting knob, a step plate, a firing pin assembly, and a shipping plug.

Functioning:

There is no explosive functioning of this fuze.

Tabulated Data:

Model number M606 Inert
 Type AT, Mech, Inert

Drawings:

Metal Parts 8796140
 Weight Approx 2.4 lb

Dimensions:

Height 2.7 in.
 Max diam 10 in.

Material Plastic

Thread:

Fuze body None
 Detonator holder
 assembly 0.563-12 UNC-1A

Temperature Limits N/A

Shipping and Storage Data:

Packing arrangement As required
 DODAC Not listed - parts
 stocked under NSN
 1345-00-077-2143

Painting Olive Drab w/
 Bronze Circles on
 Top
 Marking White

Reference:

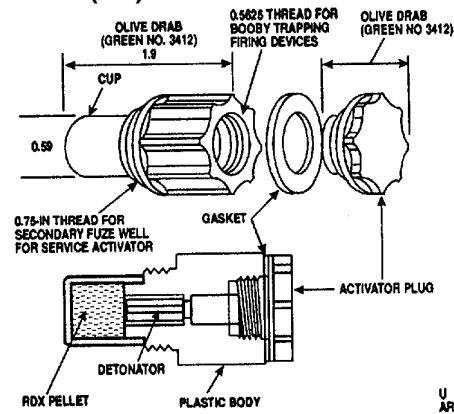
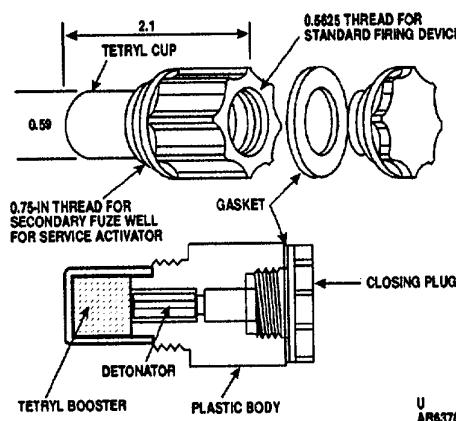
TM 9-1345-203-12&P

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CHAPTER 6
ACTIVATORS AND FUZES

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ACTIVATOR, ANTITANK: M1 (M2)

Type Classification:

M1 S 36841 (LCC-B)
M2 S 36841 (LCC-A)

Use:

Activators M1 and M2 are essentially detonator boosters and are used as adapters with any one of several kinds of pull type or pull release type firing devices to supply antitank mines with a secondary fuze for antilift/booby trapping purposes.

Description:

The activator bodies are made of plastic and are threaded externally to fit the 3/4-inch secondary fuze well of service antitank mines. The activators are threaded internally to accept service firing devices. The detonator is cemented within the body and a booster charge is contained in a cylindrical cup cemented to one end. Each activator is shipped with a closing plug and gasket.

Difference between models. Activator M1 is used with antitank mine M15 and activator M2 is used with nonmetallic antitank mine M19. Earlier M1 activators were made of black plastic, while newer types are made of olive-drab plastic. The M1 activator uses tetryl for the booster while the M2 model uses RDX.

Functioning:

The activator performs the function of an adapter, to fit the firing device to the mine. As a detonator booster, it increases the output of the secondary firing devices, assuring detonation of the mine main charge.

Precautions. Activator misfires resulting from failure of the detonator or booster to fire, may be due to excess cap sealing compound in the flash hole. Examine the cavity in the body of the activator to be sure it is free of foreign matter. At the same time, check tip of firing device, especially the flash hole, to be sure it is free of foreign matter.

Tabulated Data:

Model numbers M1, M2

Type Detonator-booster

Drawings:

Assembly:

M1 73-9-16

M2 7548048

Weight 0.04 lb

Dimensions:

Length:

M1 2.14 in.

M2 2.10 in.

Diameter 0.975 in.

Material Plastic

Thread:

External 0.75-12UNS-1A

Internal 0.563-12UNC-2B

Temperature Limits N/A

Shipping and Storage Data:

Packing - M1 & M2 1 per metal container, 180 container (180 activators) wooden box

Weight 54.5 lb

Dimensions 16-3/8 x 16-3/4 x 14-3/4 in.

Cube 2.34 cu ft

Hazard class/division and

storage compatibility

group 1.1B

UNO serial number 0106

UNO Proper shipping

name Fuzes, detonating

DOT shipping classClass A Explosive
 DOT markingDETONATING
 FUZES, HANDLE
 CAREFULLY, DO
 NOT STORE OR
 LOAD WITH ANY
 HIGH
 EXPLOSIVE

DODAC:
 M11345-K001
 M21345-K003

Painting:
 M1:
 EarlyBlack
 CurrentOlive Drab
 M2Olive Drab
 MarkingYellow/White

Explosive Data:

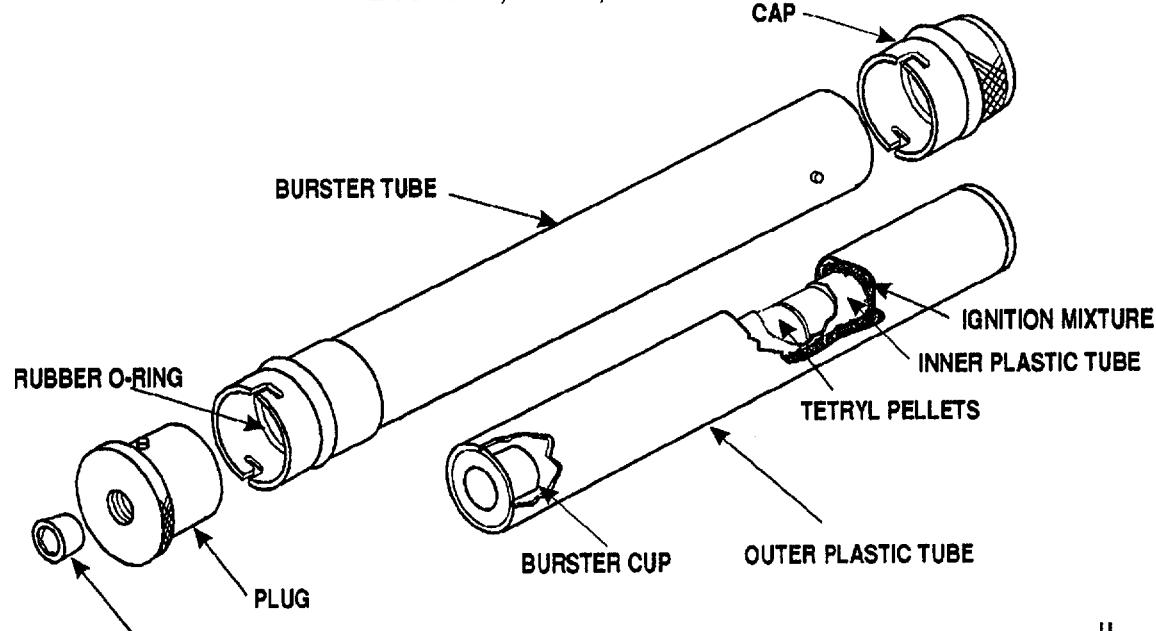
| Item | Type | Weight | |
|----------------------|-------------|---------|---------|
| | | AV | Metric |
| M1 Activator: | | | |
| M31 | | | |
| Detonator | Igniter mix | 2.32 gr | 150 mg |
| | Lead azide | 3.86 gr | 250 mg |
| | Tetryl | 4.12 gr | 270 mg |
| Booster | Tetryl | 36 gr | 2.3 mg |
| M2 Activator: | | | |
| M31A1 | | | |
| Detonator | Igniter mix | 2.32 gr | 150 mg |
| | Lead azide | 3.86 gr | 250 mg |
| | Tetryl | 4.12 gr | 270 mg |
| Booster | RDX | 40 gr | 2.58 mg |

Reference:

TM 9-1345-203-12&P

BURSTER, FIELD, INCENDIARY: M4

BURSTER, FIELD, INCENDIARY: M4



II

Type Classification:
S 3520 (LCC-A)

Use:

The Burster, Field, Incendiary, M4 is used primarily to ignite field improvised incendiary munitions.

Description:

The M4 Burster is a tubular steel container with a cap at one end and a plug at the other, both secured by bayonet-type locking lugs. A small threaded hole in the plug is closed with a shipping plug and provides an access port for fuzing. A pyrotechnic ignition mixture, tetryl pellets and a burster cup are contained in two concentric plastic tubes preassembled within the steel burster tube. The bayonet-type locking design of the cap and plug permit the joining of two or more of the bursters, as required. Both cap and plug are sealed by means of a preformed packing.

Functioning:

The burster can be initiated by a fuze, blasting cap, detonating cord or any standard booby trap firing device. This initiates the explosive material in the burster cup which detonates the tetryl pellets in the inner tube. The tetryl charge sets off the pyrotechnic mixture

in the outer tube bursting the outer case of the M4 Burster.

Tabulated Data:

| | |
|-----------------------------|--------------------------------------|
| Model number | M4 |
| Type | Incendiary |
| Drawings: | |
| Assembly..... | D37-4-54 |
| Weight | 1.3 lb |
| Dimensions: | |
| Length | 12 in. |
| Max diameter | 1.75 in. |
| Material | Steel |
| Thread | 0.563-12NC-Spec |
| Temperature Limits | Dependent on fusing type |
| Shipping and Storage Data: | |
| Packing | 20 per fiber container in wooden box |
| Weight..... | 50 lb |
| Dimensions | 14-1/2 x 14-7/8 x 10-7/8 in. |
| Cube | 1.36 cu ft |
| Packing - Supplemental..... | 36 wooden boxes palletized |
| Weight..... | 2650 lb |
| Dimensions | 49 x 44-1/2 x 43-1/2 in. |
| Cube | 54.4 cu ft |

Hazard class/division and storage compatibility
 group 1.1G
 UNO serial number 0043
 UNO Proper shipping name Bursters
 DOT shipping class Class A Explosive
 DOT marking BURSTERS
 (EXPLOSIVE),
 HANDLE
 CAREFULLY
 DODAC..... 1345-K010
 Painting..... Olive Drab
 Marking..... Yellow and Black

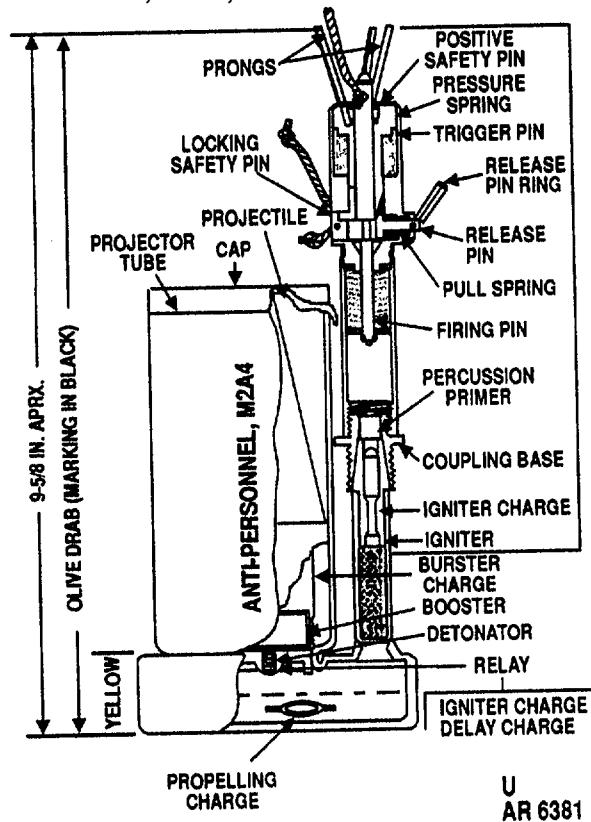
Explosive Data:

| Item | Type | Weight | |
|-------------|------------|-------------|----------|
| | | AV | Metric |
| M4 Burster: | | | |
| | Explosive | Tetryl | 1227 gr |
| | Incendiary | Igniter mix | 0. lb |
| | | | 79.65 gm |
| | | | 230 gm |

Reference:

TM 9-1345-203-12&P

FUZE, MINE, COMBINATION: M6A1

Type Classification:

OBS 11756003

Use:

Fuze M6A1 is used to activate the M2 series of antipersonnel mines.

Description:

Fuze M6A1 is of the combination type, with a three-pronged pressure firing device at the top and a pull wire release-pin ring at the side. The fuze body houses a spring loaded firing pin and a cocking mechanism. The igniter assembly contains a percussion cap primer and a black powder igniter. The firing mechanism consists of a cylindrical metal case containing a trigger pin, a release pin and a firing pin, each fitted with a coil spring. Two safety pins render the fuze safe during shipment and handling. A cotter pin passes through the end of the release pin and bears against the body of the fuze. A second pin, called the safety firing pin, passes through the end of the firing pin that protrudes above the top of the fuze. The base assembly containing the primer and igniter is assembled

to the mine as issued and protected by a hexagonal shipping cap. Firing mechanism is packed separately in the mine packing box. Completely assembled fuzes may also be requisitioned separately.

Functioning:

The firing mechanism is activated by a force of 8 to 20 pounds on any of the prongs, or a pull of 3 to 10 pounds on the release pin. Either type of action will cause the firing pin to strike the primer which initiates the igniter charge.

Tabulated Data:

| | |
|----------------------------|------------------------|
| Model number | M6A1 |
| Type | Mechanical combination |
| Drawings: | |
| Assembly..... | 73-9-13 |
| Weight | Approx 6 oz |
| Dimensions: | |
| Height (incl prongs) | 6.62 in. |
| Max diameter | 1.103 in. |
| Material | Zinc alloy |
| Thread | 0.563-12 UNC-1A |

Temperature Limits:

Firing:

Lower..... -40°F
 Upper..... + 125°F

Storage:

Lower..... -60°F
 Upper..... +160°F

Shipping and Storage Data:

Packing..... 3 fuzes/container, 4
 container/water-
 proof container (48
 fuzes) in wooden
 box

Weight 32.8 lb

Dimensions 22-5/8 x 10-3/8 x
 9-3/8 in.

Cube 1.29 cu ft

Hazard class/division and
 storage compatibility

group 1.4D

UNO serial number 0410

UNO Proper shipping

name Fuzes, detonating
 DOT shipping class Class C Explosive
 DOT marking PERCUSSION
 FUZES, HANDLE
 CAREFULLY
 DODAC 1345-K053
 Painting Olive Drab

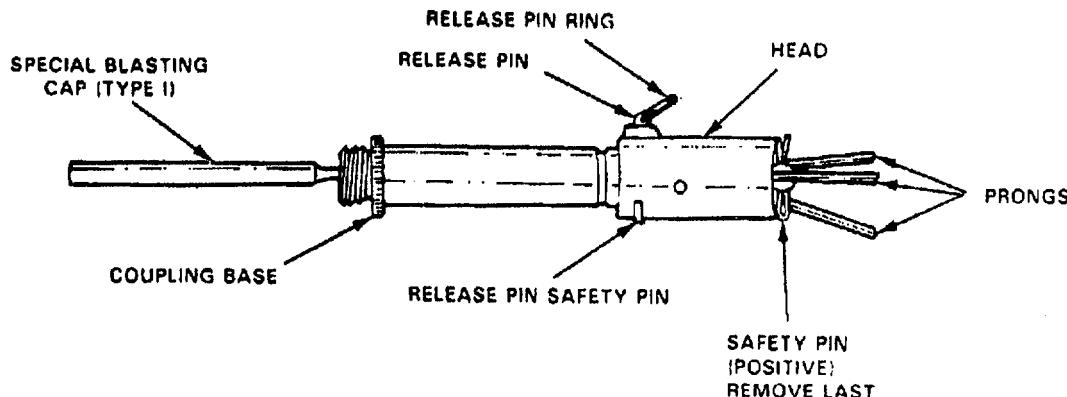
Explosive Data:

| Item | Type | Weight | |
|-------------|------------|--------|--------|
| | | AV | Metric |
| M6A1 Fuze: | | | |
| Perc primer | #3 Western | | |
| Igniter | Blk Pdr | 10 gr | 648 mg |

Reference:

TM 9-1345-203-12&P

FUZE, MINE, COMBINATION: M7A1



50

Type Classification:

OBS 11756003

Use:

Fuze M7A1 is used to activate the M3 anti-personnel mine.

Description:

Fuze M7A1 is of the combination type, with a three-pronged pressure firing device at the top and a pull wire release-pin ring at the side. The fuze body houses a spring loaded firing pin and a cocking mechanism. The fuze base contains a primer and a crimped-on non-electric blasting cap. The firing mechanism consists of a cylindrical metal case containing a trigger pin, a release pin, and a firing pin, each fitted with a coil spring. Two safety pins render the fuze safe during shipment and handling. A cotter pin passes through the end of the release pin and bears against the body of the fuze. A second pin, called the safety firing pin, passes through the end of the firing pin that protrudes above the top of the fuze. The fuze is shipped as a complete assembly, consisting of a firing mechanism and a primed base, with a crimped-on blasting cap. When supplied with the M3 mine, the fuze is isolated, but packed within the same box. Fuzes are also packed for separate issue.

Functioning:

The firing mechanism is activated by a force of 8 to 20 pounds on any of the prongs or a pull of 3 to 10 pounds on the release pin. Either type of action will cause the firing pin to strike the primer which initiates the non-electric blasting cap.

Tabulated Data:

| | |
|---|---|
| Model number | M7A1 |
| Type | Mechanical combination |
| Drawings: | |
| Assembly..... | 73-9-13-7 |
| Weight | Approx 6 oz |
| Dimensions: | |
| Height (incl prongs) | 6.37 in. |
| Max diameter | 1.103 in. |
| Material | Zinc alloy |
| Thread | 0.563-12UNC-1A |
| Temperature Limits: | |
| Firing: | |
| Lower..... | -40°F |
| Upper | + 125°F |
| Storage: | |
| Lower..... | -60°F |
| Upper | + 160°F |
| Shipping and Storage Data: | |
| Packing | 3 fuzes/cardboard carton, 4 carton/ w/waterproof package, 4 package (48 fuzes) wooden box |
| Weight..... | 33.0 lb |
| Dimensions | 22-5/8 x 10-3/8 x 9-3/8 in. |
| Cube 1.26 cu ft | |
| Hazard class/division and storage compatibility | |
| group | (04) 1.2D |
| UNO serial number..... | 0409 |
| UNO Proper shipping name | Fuzes, detonating |
| DOT shipping class | Class C Explosive |
| DOT marking..... | COMBINATION |
| | FUZES, HANDLE CAREFULLY |
| DODAC | 1345-K054 |
| Painting | Olive Drab |

Explosive Data:

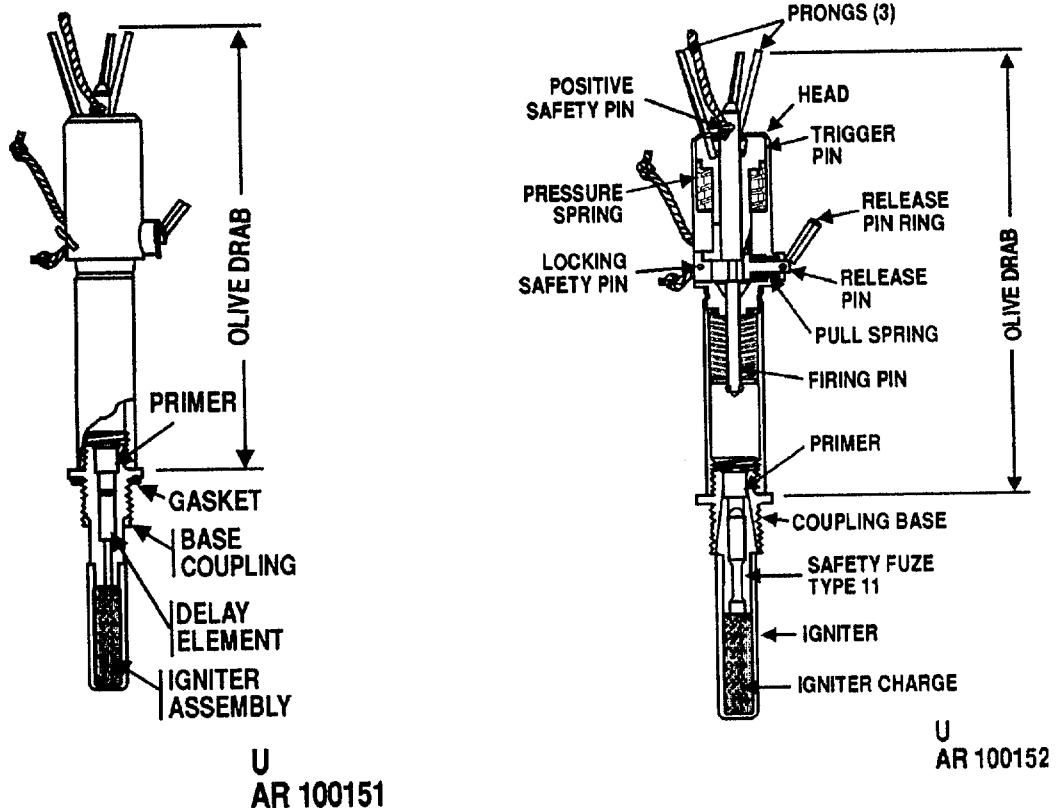
| Item | Type | AV | Weight Metric |
|--------------|------------|----|------------------|
| M7A1 Fuze: | | | |
| Perc Primer | #3 Western | | |
| Blasting Cap | Tp I | | |

Reference:

TM 9-1345-203-12&P

6-10

FUZE, MINE, COMBINATION: M10 (M10A1, M10A2)

Type Classification:

C 6558 (LCC-S)

Use:

Fuze, Mine, Combination, M10 and M10A1 are used to activate the M8 antipersonnel practice mine. M10A2 is used to activate the M8A1 antipersonnel practice mine.

Description:

The M10 series fuses are of the combination type with a three-pronged pressure firing device at the top and a pull wire release pin ring at the side. The fuze body houses a spring-loaded firing pin and a cocking mechanism. The base contains a primer and either a length of safety fuze or a delay composition charge. The firing mechanism consists of a cylindrical metal case containing a trigger pin, a release pin, and a firing pin, each fitted with a coil spring. Two safety pins render the

fuze safe during shipment and handling. A cotter pin passes through the end of the release pin and bears against the body of the fuze. A second pin, called the safety firing pin, passes through the end of the firing pin that protrudes above the top of the fuze. The fuze igniter assemblies (primers, safety fuses, delays, black powder, or smoke charges) are replaceable. The fuses may be used many times by replacing the fired igniter assembly and recocking the firing mechanism. All models are packed with the appropriate M8 mine models. The M10A1 fuze is also packed for separate issue.

Difference between models. Fuze M10 and M10A1 use a primer to fire a delay safety fuse which ignites 15 grains of black powder. The M10 and M10A1 fuses are interchangeable; their principal difference being in the primer. The M39A1 primer used with the M10A1 fuze provides more reliable functioning than the MK5 primer used with the M10 fuze. The M10A2 fuze uses the M39A1 primer and two delay composition elements to ignite a 725 mg smoke charge.

Functioning:

The firing mechanism is activated by a force of 8 to 20 pounds on any of the prongs or a pull of 3 to 10 pounds on the release pin. Either type of action will cause the firing pin to strike the primer which initiates the delay elements. After 4 to 5 seconds these set off the igniter charge which, in turn, initiates the mine explosive train.

Tabulated Data:

| | |
|----------------------------|-----------------------------|
| Model numbers | M10, M10A1, M10A2 |
| Type | Mechanical combi- nation |
| Drawings: | |
| Assembly: | |
| M10 | 73-9-25 |
| M10A1 | 73-9-25 |
| M10A2 | 8866643 |
| Weight | Approximately 6 oz |
| Dimensions: | |
| Height (incl prongs) | 6.875 in. |
| Maximum diameter..... | 1.103 in. |
| Material | Zinc alloy |
| Thread | 0.563-12UNC-1A |
| Temperature Limits: | |
| Firing: | |
| Lower..... | 40°F |
| Upper | +125°F |
| Storage: | |
| Lower..... | -60°F |
| Upper | +160°F |

Shipping and Storage Data:

| | |
|--|---|
| Packing (M10A1) | 4 fuzes/metal con- tainer, 60 contain- ers (240 fuzes) in wooden box |
| Weight..... | 125 lb |
| Dimensions | 22 x 17-1/8 x 18 in. |
| Cube 4.23 cu ft | |
| Hazard class/division and storage compatibility | |
| group | (04) 1.2D |
| UNO serial number..... | 0409 |
| UNO Proper shipping name | Fuzes, detonating |
| DOT shipping class | Class C Explosive |
| DOT marking..... | COMBINATION |
| | FUZES, HANDLE |
| | CAREFULLY |
| DODAC | 1345-K056 |
| Painting | Olive Drab |

Explosive Data:

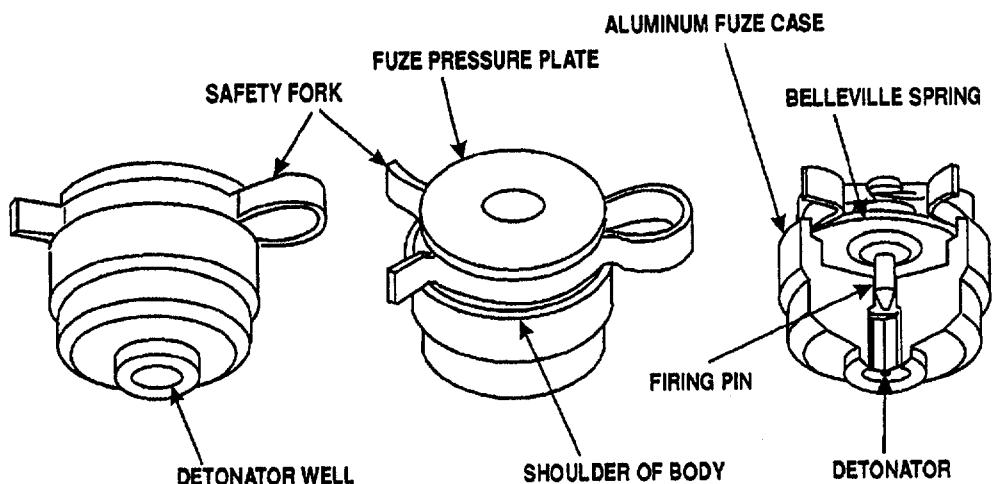
| Item | Type | Weight | |
|--------------------|---------------|----------|--------|
| | | AV | Metric |
| M10 Fuze: | | | |
| MK5 primer | Primer mix | 0.4 gr | 26 mg |
| 4.5-inch delay | Safe fuse | | |
| Igniter | Black powder | 14.98 gr | 972 mg |
| M10A1 Fuze: | | | |
| M39A1 primer | Primer mix | 0.4 gr | |
| 26 mg | | | |
| 4.5-inch delay | Safe fuse | | |
| Igniter | Black powder | 14.98 gr | 972 mg |
| M10A2 Fuze: | | | |
| M39A1 primer | Primer mix | 0.4 gr | |
| 26 mg | | | |
| Delay | Type I comp | 1.5 gr | 100 mg |
| Delay | Type III comp | 10 gr | 650 mg |
| Igniter | Smoke comp | 11.2 gr | 725 mg |

Reference:

TM 9-1345-203-12&P

FUZE, MINE, AT: M603

FUZE, MINE, AT: M603

Type Classification:

S 36841 (LCC-A)

Use:

The M603 fuze is an instantaneous mechanical pressure-type fuze and is used with light antitank mine M7A2 and heavy antitank mine M15 and chemical agent mine M23.

Description:

The M603 fuze body contains a firing pin assembly, a cover assembly, a safety fork (clip), and a detonator. The firing pin is actuated by a belleville spring.

Functioning:

A load of 140 to 240 pounds is required to depress the belleville spring and cause it to snap into reverse, driving the firing pin into the detonator. When assembled to the mine M15, a total force of 350 to 750 pounds is needed on the pressure plate to overcome the combined resistance of the belleville springs in the mine and the fuze, and activate the fuze.

Tabulated Data:

Model number M603
 Type Antitank
 Drawings:
 Assembly 73-9-55
 Weight 1.56 oz
 Dimensions:
 Height 1.17 in.
 Max diameter 1.14 in.

Material Aluminum & Steel

Thread None

Temperature Limits:

Firing:

| | | |
|-------|-------|---------|
| Lower | | -40°F |
| Upper | | + 125°F |

Storage:

| | | |
|-------|-------|---------|
| Lower | | -60°F |
| Upper | | + 160°F |

Shipping and Storage Data:

| | | |
|---------|-------|---|
| Packing | | 1 fuze in metal container, 180 containers (180 fuzes) in wooden box |
|---------|-------|---|

| | | |
|--------|-------|---------|
| Weight | | 71.6 lb |
|--------|-------|---------|

| | |
|---|-------|
| Hazard class/division and storage compatibility | |
|---|-------|

| | | |
|-------|-------|------|
| group | | 1.4D |
|-------|-------|------|

| | | |
|-------------------|-------|------|
| UNO serial number | | 0410 |
|-------------------|-------|------|

| | |
|---------------------|-------|
| UNO Proper shipping | |
|---------------------|-------|

| | | |
|------|-------|-------------------|
| name | | Fuzes, detonating |
|------|-------|-------------------|

| | | |
|--------------------|-------|-------------------|
| DOT shipping class | | Class C Explosive |
|--------------------|-------|-------------------|

| | | |
|-------------|-------|------------|
| DOT marking | | PERCUSSION |
|-------------|-------|------------|

| | |
|---------------|-------|
| FUZES, HANDLE | |
|---------------|-------|

| | |
|-----------|-------|
| CAREFULLY | |
|-----------|-------|

| | | |
|-------|-------|-----------|
| DODAC | | 1345-K050 |
|-------|-------|-----------|

| | | |
|----------|-------|-----------|
| Painting | | Unpainted |
|----------|-------|-----------|

| | | |
|---------|-------|---------------|
| Marking | | Metal stamped |
|---------|-------|---------------|

Explosive Data:

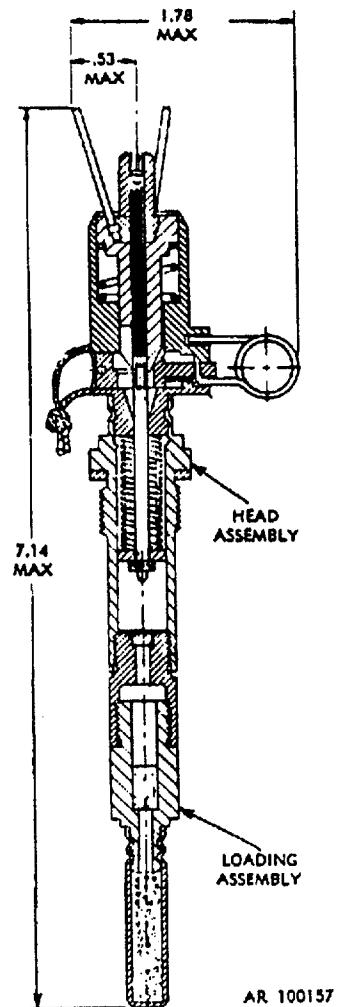
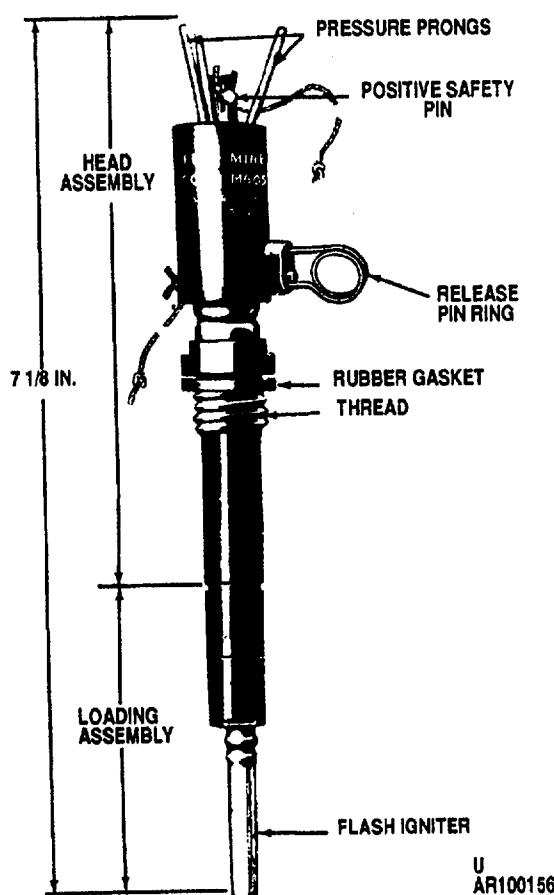
| Item | Type | Weight | |
|-----------|---------|---------|--------|
| | | AV | Metric |
| M45 | PA #100 | 1.85 gr | 120 mg |
| Detonator | | | |
| | Lead Az | 4.24 gr | 275 mg |
| | RDX | 1.85 r | 120 mg |

Reference:

TM 9-1345-203-12&P

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FUZE, MINE, COMBINATION: M605

Type Classification:

S 34783 (LCC-A)

Use:

The M605 fuze is used with the M16 series antipersonnel mines.

Description:

The M605 fuze is of the combination type, with a three-pronged pressure firing mechanism at the top and a pull wire release pin ring at the side. The firing mechanism is housed in a cylindrical, metal case which contains the cocking mechanism and a trigger pin, a release pin, and a firing pin, each fitted with a coil spring. The base or loading assembly contains a primer, a delay charge, a relay charge, and an igniter

charge. Two safety pins render the fuze safe during shipment and handling. A cotter pin passes through the end of the release pin and bears against the body of the fuze. A second cotter pin passes through the end of the firing pin, between the prongs. An interlocking pin between the safety pins provides additional safety. Fuze are shipped with the M16 mines or as separate issue. A hexagonal shipping plug closes the fuze well of the mine. A fusing wrench M25 is issued with the mine.

Functioning:

The M605 fuze is functioned either by a 3 to 15 pound pull on a trip wire or a force of 8 to 45 pounds on one or more of the prongs protruding from the top of the fuze. This pull, or push, releases the firing pin which strikes the primer, igniting the delay charge. The delay allows

time for persons stepping on prongs to move from directly above the mine, where their presence might inhibit the proper functioning of the mine. The delay charge ignites the relay charge which, in turn, sets off the flash igniter charge. This charge ignites the expelling charge, the first element of the mine firing train.

Tabulated Data:

Model number M605
 Type Combination
 Drawings:
 Assembly 7548284
 Weight 6 oz
 Dimensions:
 Height 7.125 in.
 Max diameter 1.75 in.
 Material Zinc alloy
 Thread 0.625-11UNC-1A
 Temperature Limits:
 Firing:
 Lower -40°F
 Upper + 125°F
 Storage:
 Lower -60°F
 Upper +160°F
 Shipping and Storage Data:
 Packing 4 fuzes/metal box,
 60 boxes (240
 fuzes) in wooden
 box

Weight 125 lb
 Dimensions 22 x 17-1/8 x 18 in.
 Cube 4.09 cu ft
 Hazard class/division and
 storage compatibility
 group 1.4D
 UNO serial number 0410
 UNO Proper shipping
 name Fuzes, detonating
 DOT shipping class Class C Explosive
 DOT marking COMBINATION
 FUZES, HANDLE
 CAREFULLY
 DODAC 1345-K058
 Painting Olive Drab
 Marking Yellow

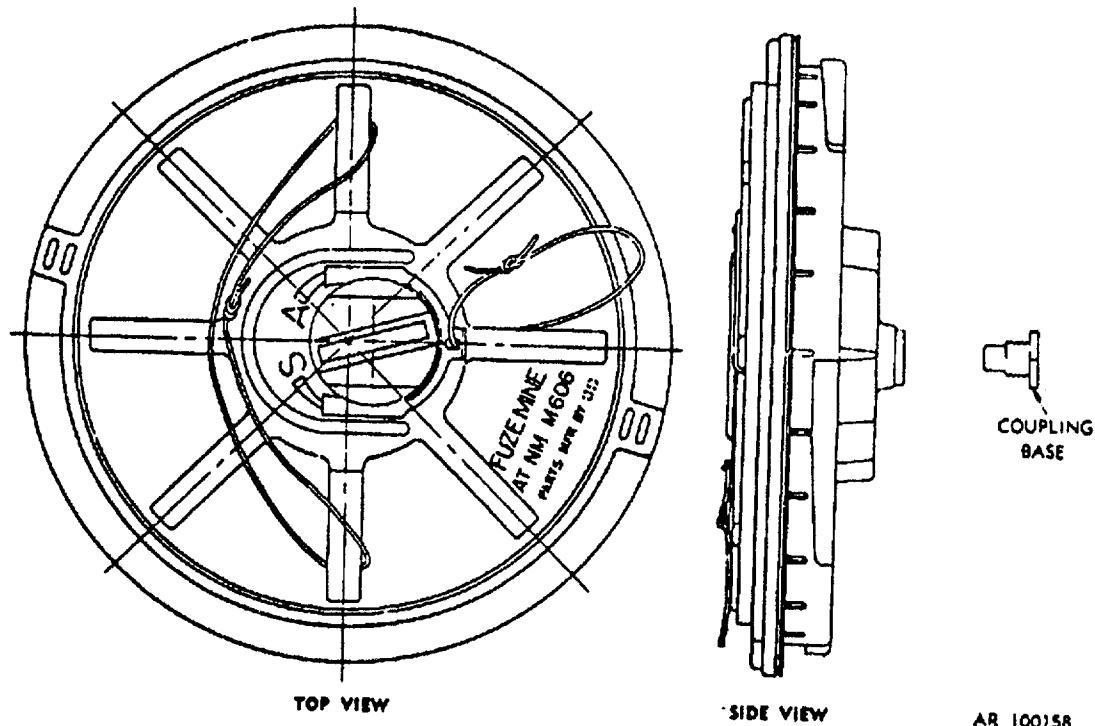
Explosive Data:

| Item | Type | Weight | |
|------------|------------|---------|--------|
| | | AV | Metric |
| M605 Fuze: | | | |
| M42 Prim | PA-101 | 0.34 gr | 22 mg |
| Delay | Tp II Comp | 7.3 gr | 475 mg |
| Flash Ign | A5 Blk Pdr | 10 gr | 648 mg |

Reference:

TM 9-1345-203-12&P

FUZE, MINE, ANTITANK, NONMETALLIC: M606

Type Classification:

S 37119 (LCC-A)

Use:

Fuze M606 is a mechanical pressure-type and is used to initiate M19 nonmetallic antitank mine.

Description:

Fuze M606 is a flat, round disk, constructed of plastic material to avoid discovery by magnetic mine detectors. The fuze body contains a pressure plate, two belleville springs, a setting knob, a step plate, a firing pin assembly, and a detonator holder assembly.

Functioning:

After the safety clip has been removed and the setting knob turned to the armed position, a force of 300 to 500 pounds on the pressure plate will depress the upper belleville spring, and cause the lower spring to

snap into reverse, driving the firing pin into the detonator.

Tabulated Data:

| | |
|----------------------------|-----------------|
| Model number | M606 |
| Type | AT, NM |
| Drawings: | |
| Assembly..... | 9220396 |
| Weight | 2.43 lb |
| Dimensions: | |
| Height..... | 2.7 in. |
| Max diameter | 10 in. |
| Material | Plastic |
| Thread: | |
| Fuze body | None |
| Detonator holder assy..... | 0.563-12 UNC-1A |
| Temperature Limits: | |
| Firing: | |
| Lower..... | -40°F |
| Upper | + 125°F |
| Storage: | |
| Lower..... | -60°F |
| Upper | +160°F |

Shipping and Storage Data:

Packing Not separate issue-packed w/M19
mine

Hazard class/division and storage compatibility group 1.1D

UNO serial number 0137

UNO Proper shipping name Mines

DOT shipping class Class A Explosive

DOT marking EXPLOSIVE
MINES

DODAC 1345-K250

Painting Olive Drab

Marking White

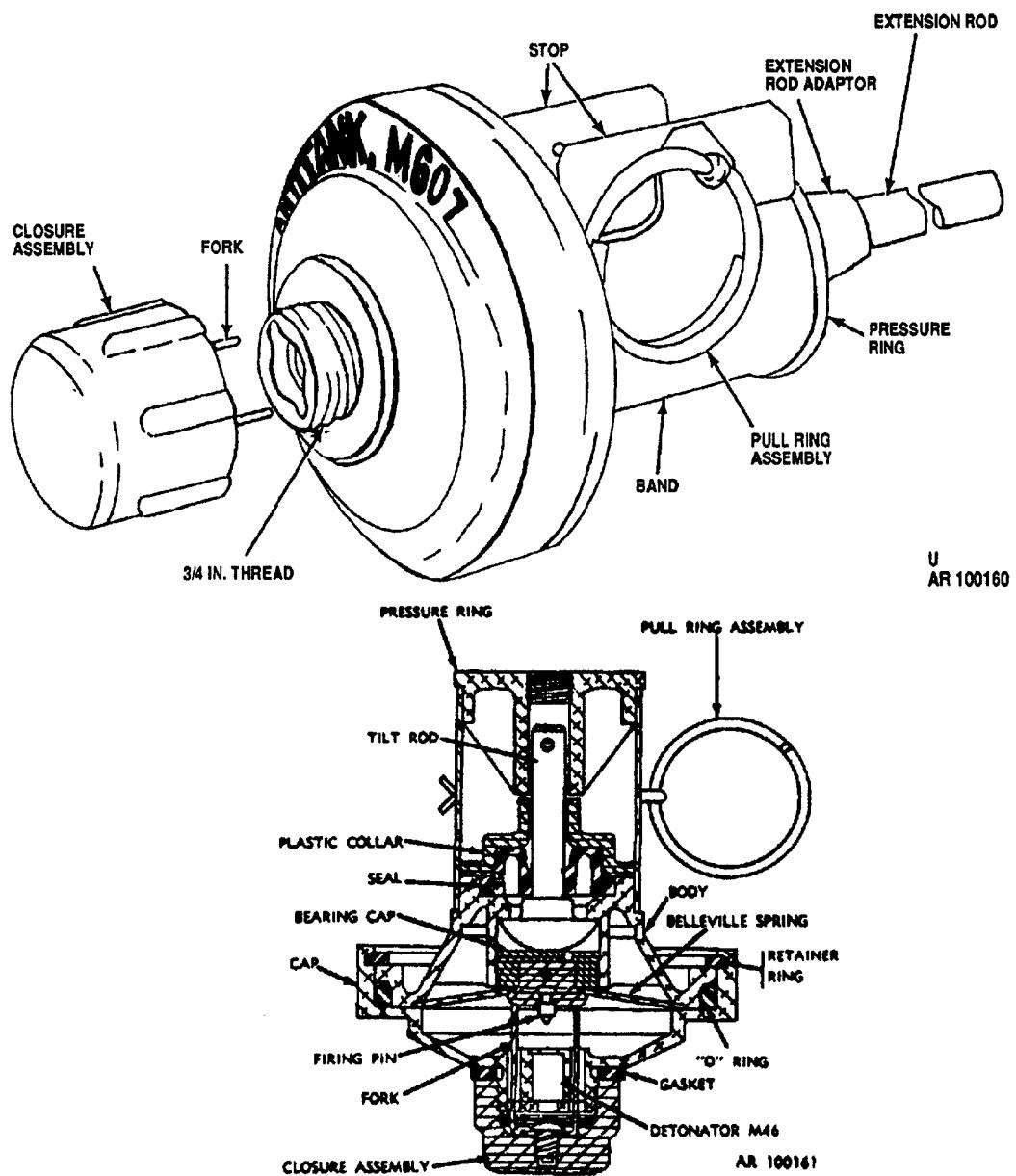
Explosive Data:

| Item | Type | Weight | |
|------------|---------|---------|----------------|
| | | AV | Metric |
| M606 Fuze: | | | |
| | M50 Det | PA #100 | 1.62 gr 105 mg |
| | | Lead Az | 3.85 gr 250 mg |
| | | RDX | 7.85 gr 510 mg |

Reference:

TM 9-1345-203-12&P

FUZE, MINE, ANTITANK: M607

Type Classification:

S 37246 (LCC-A)

Use:

Fuze M607 is used with antitank mine M21.

Description:

The M607 fuze incorporates a belleville spring-loaded firing pin, a tilt rod, a pressure ring, and a

frangible plastic collar. The base is threaded to fit the mine and is shipped with a closure assembly screwed in place for protection. Fuze wrench M26 fits the closure assembly. A safety band and strap prevents movement of the fuze pressure ring. This is secured with a cotter pin.

Functioning:

Fuze M607 is a pressure type fuze that can also be activated by side thrust loads, when so adapted, by the addition of an extension rod.

The plastic collar within the fuze is designed to shatter under vertical loading of the pressure ring, or from side load effects on the tilt rod. A 290 pound vertical load with 1/8-inch travel, or a horizontal force on the tilt rod greater than 3.75 pounds acting through approximately 20 degrees, is required to shatter the plastic collar. Once the collar is broken, continuing force from either source will be transmitted through the tilt rod to the belleville spring, which will drive the firing pin into the M46 detonator. This, in turn, will function the mine.

Tabulated Data:

Model numberM607
 TypeMech, AT
 Drawings:
 Assembly.....8833783
 Weight8 oz
 Dimensions:
 Height.....4 in.
 Max diameter2.8 in.
 Material Aluminum
 Thread size0.75-12NS-2A
 Temperature Limits:
 Firing:
 Lower.....-40°F
 Upper+ 125°F

Storage:
 Lower.....-60°F
 Upper+160°F
 Shipping and Storage Data:
 PackingPacked with M21
 AT Mine (not
 issued as separate
 item)
 Hazard class/division and
 storage compatibility
 group1.1D
 UNO serial number.....0137
 UNO Proper shipping
 nameMines
 DOT shipping classClass A Explosive
 DOT marking.....EXPLOSIVE
 MINES
 DODAC1345-K181
 PaintingOlive Drab
 MarkingYellow

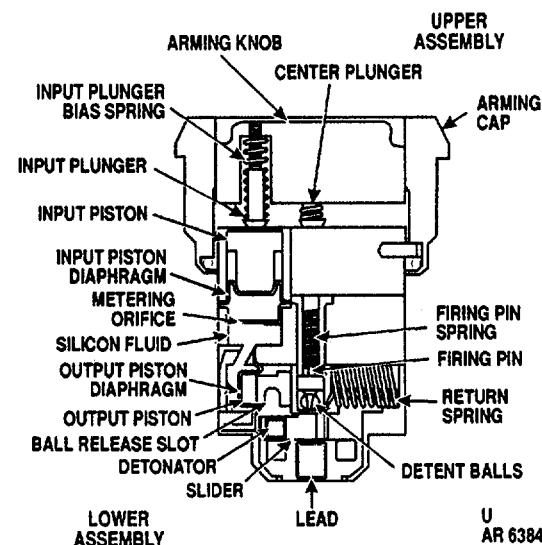
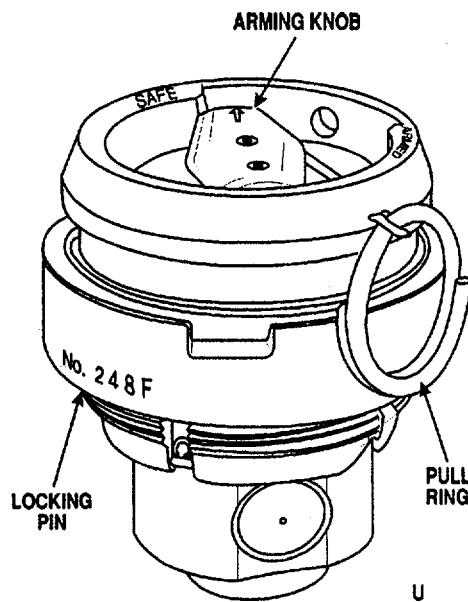
Explosive Data:

| Item | Type | Weight | |
|---------|----------|---------|--------|
| | | AV | Metric |
| M46 Det | NOL #130 | 1.62 gr | 105 mg |
| | Lead Az | 4.31 gr | 280 mg |
| | RDX | 2.24 gr | 145 mg |

Reference:

TM 9-1345-203-12&P

FUZE, MINE, ANTITANK: M608
FUZE, MINE, ANTITANK: M608



Type Classification:

S 5736 (LCC-A)

(Has not been produced and is not fielded)

Use:

Fuze M608 is a direct contact, pressure-actuated fuze, containing a delay feature to provide resistance to blast-type countermeasures. It is used with antitank mine M6A2 and M15, and with chemical agent mine M23. It is suitable for use on land or in water, in temperate or tropical environments.

Description:

The fuze is constructed primarily of aluminum and stainless steel and consists of a fuze assembly with an integral arming cap. The fuze utilizes an out-of-line detonator system for safety and a hydraulic system to provide the delay. A spring-loaded firing pin, an M55 detonator, and a lead charge comprise the firing train. The fuze is threaded into the mine fuze well and secured by tightening the locking ring. The fuze is armed by removing the pull pin which allows the arming knob to be rotated from Safe to Armed position. This rotation aligns the input plunger with the input piston,

and allows the actuating load to be transferred to the firing mechanism.

Functioning:

A load of 300-600 pounds applied for 250-450 milliseconds is required to function the M608 fuze, when assembled to the M15 mine.

Tabulated Data:

| | |
|---------------------|------------|
| Model number | M608 |
| Type | Antitank |
| Drawings: | |
| Assembly..... | 9204009 |
| Weight | 1 lb |
| Dimensions: | |
| Height..... | 3.5 in. |
| Max diameter | 3.25 in. |
| Material | Aluminum |
| Thread | 2.313-14NS |
| Temperature Limits: | |
| Firing: | |
| Lower..... | -40°F |
| Upper | + 125°F |
| Storage: | |
| Lower..... | -60°F |
| Upper | + 160°F |

Shipping and Storage Data:

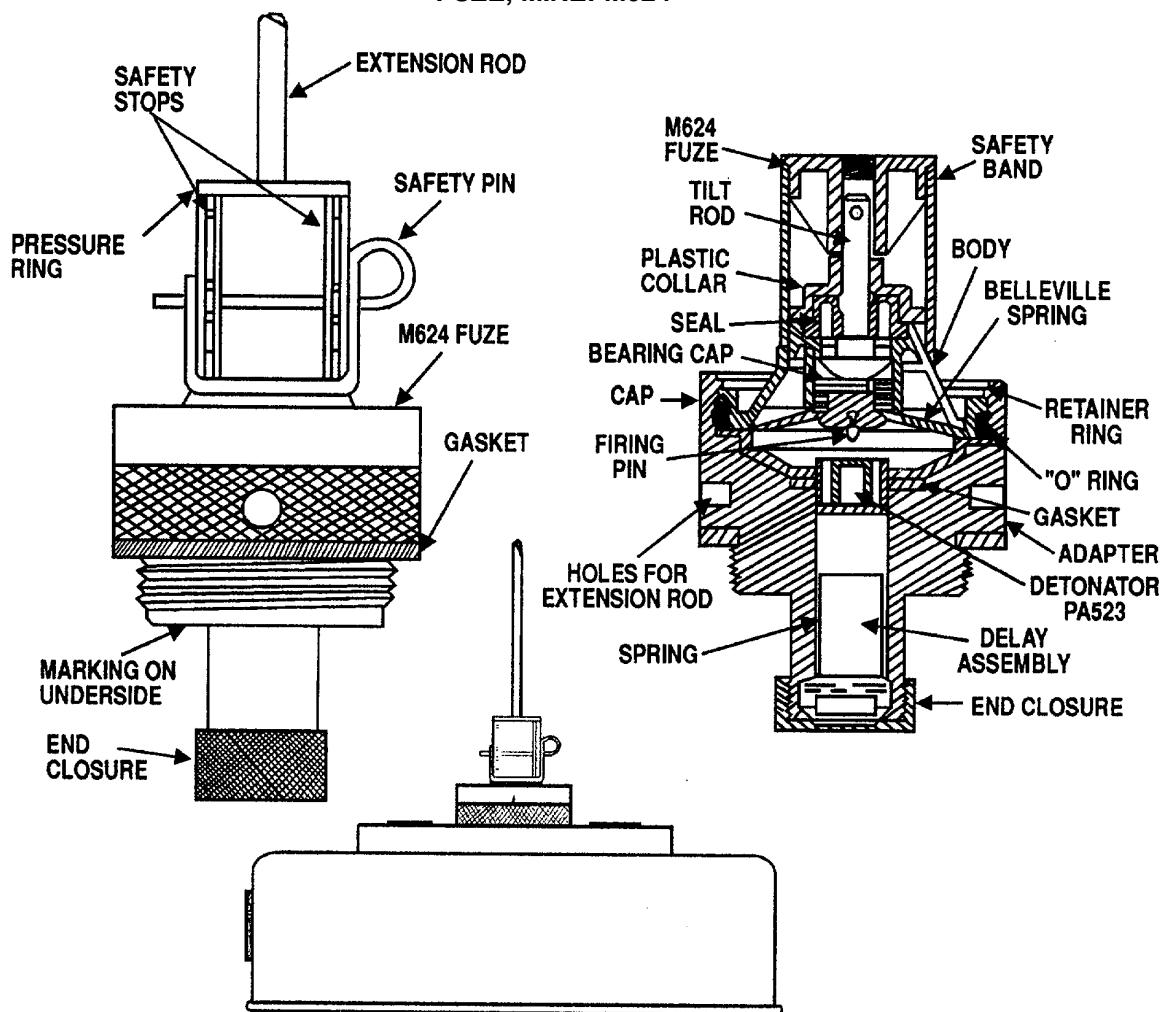
Packing 1 fuze/carton in
barrier bag. 45
bags (45 fuzes) in
wooden box
Weight 64 lb
Dimensions 23-5/8 x 15 x 14 in.
Cube 2.9 cu ft
Hazard class/division and
storage compatibility
group 1.4D
UNO serial number 0410
UNO Proper shipping
name Fuzes, detonating

DOT shipping class Class C Explosive
DOT marking PERCUSSION
FUZES, HANDLE
CAREFULLY
DODAC 1345-K061
Painting Olive Drab
Marking White

Reference:

TM 9-1345-203-12&P

FUZE, MINE: M624

U
AR 2688Type Classification:

Not available (LCC-A)

Use:

Fuze M624 is used with Antitank Mine M15.

Description:

The M624 fuze consists of the M607 fuze connected to an adaptor which is loaded with a delay element. The adaptor is designed to screw into the mine fuze well. The M624 fuze incorporates a belleville spring-loaded firing pin, a tilt rod, a pressure ring, and a frangible plastic collar. A safety band and stop prevents movement of the fuze pressure ring. This is secured with a safety pin.

Functioning:

Fuze M624 is a pressure type fuze that can also be activated by side thrust loads, when so adapted, by the addition of an extension rod. The plastic collar within the fuze is designed to shatter under vertical loading of the pressure ring, or from side load effects on the tilt rod. A 290 pound vertical load with 1/8-inch travel, or a horizontal force on the tilt rod greater than 3.75 pounds acting through approximately 20 degrees, is required to shatter the plastic collar. Once the collar is broken, continuing force from either source will be transmitted through the tilt rod to the belleville spring, which will drive the firing pin into the PA523 detonator. This will activate the delay element which in turn will initiate the mine.

Tabulated Data:

Model number M624
 Type Mech, AT
 Drawings:
 Assembly 12546032
 Weight 1.0 lb
 Dimensions:
 Height 4.7 in.
 Max diameter 2.83 in.
 Length of extension rod 24.4 in.
 Material Aluminum alloy
 Thread Size 2.3125-14 UNS-1A
 Temperature Limits:
 Operational:
 Lower -40°C (-400F)
 Upper +52°C (+ 1250F)
 Storage:
 Lower -51°C (-600F)
 Upper +71°C (+1600F)

Shipping and Storage Data:

Packing One fuze per fiber board sleeve, 3 fiber board sleeves per M19A1 metal container, four M19A1 containers per wirebound box. Three extension rod pieces (1 rod) placed in a foil bag, 3 foil bags put on top of the 3 fuzes in each M19A1 metal container. There are a total of 12 fuzes and 12 three piece extension rods per wirebound box.

Packing box:
 Weight 42 lb
 Dimensions (in.) 17-3/8 x 11-1/2 x 8-1/8

Cube 1.0 cu ft
 Drawing number 5581378
 Hazard class/division 1.4
 Storage compatibility
 group S
 DOT shipping class C
 DOT designation DETONATING FUZES, CLASS C EXPLOSIVE, HANDLE CAREFULLY
 DODAC 1345-K068
 UNO serial number 0367
 UNO Proper shipping
 name Fuzes, detonating
 Painting:
 M607 fuze Olive drab
 Adaptor Anodized black
 Marking Yellow

Explosive Data:

| Item | Type | Weight AV | Weight Metric |
|-------------------------|-----------------------|--------------------|------------------|
| Fuze, Mine: M624 | | | |
| PA523 Detonator: | | | |
| Primer | Prim Mix | 92 mg | |
| Intermediate | Lead Az | 248 to 280 mg | |
| Charge | | | 145 mg |
| Lower Charge RDX | | | |
| Delay Element: | | | |
| M42 Primer | PA-101 Primer comp | 0.31 to 0.35 gr | |
| Delay Comp | Barium Chromate | 630 mg | |
| | Boron | 70 mg | |
| Relay | Lead Az RDX | 300 mg 275 mg | |

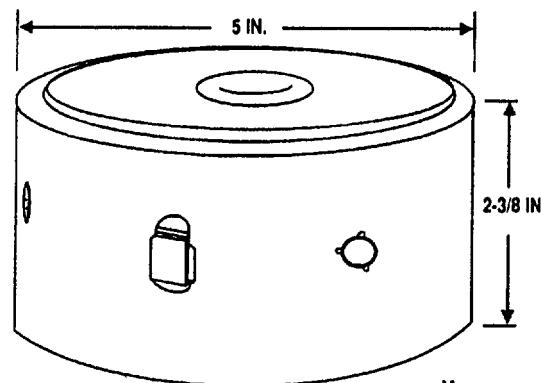
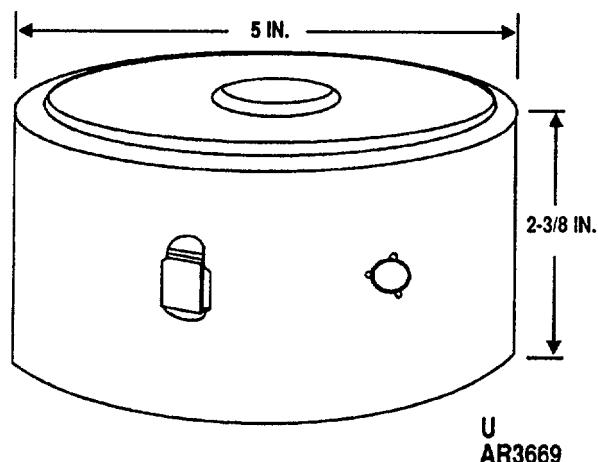
Reference:

TM 9-1345-203-12&P
 TM 9-1345-203-34&P

CHAPTER 7
PROJECTILES WITH ANTITANK MINES

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PROJECTILE, 155 MILLIMETER: AT, M718 AND M718A1 WITH ANTITANK MINES

U
AR 6385U
AR3669**Type Classification:**

M718 - Standard, Logistic Control Code A
 M718A1 - Standard, Logistic Control Code A
 MSR 04866010

Use:

These projectiles are used to deliver antitank mines in front of enemy armored forces to deny/delay access to a particular area for a specific time period. The "L" means "Long" for the long time until mine self-destructs (48 hours, nominal).

Description:

The projectiles are of the separate loading type (the fuzes, propelling charges, and primers are handled separately). The projectiles are shipped from the loading plant with fusible lifting plugs to facilitate handling, and as a safety measure. Before firing, the lifting plugs must be replaced with M577 series, MTSQ fuzes. The projectiles contain a payload of antitank

mines that are ejected during projectile flight by an expulsion charge. The rotating bands are protected from damage during transportation and handling by plastic grommets.

Functioning:

When the projectile is fired, the primer ignites the propelling charge which propels the round to the target area. The MTSQ fuze functions at its pre-set time setting, initiating the expulsion charge, which ejects the mines from the projectile. The mines (having been subjected to the required set-back, rotational, and set-forward forces) are armed immediately or soon after coming to rest on the ground, depending upon projectile model. Upon sensing the proximity of tanks, the mines initiate. If the mines are not initiated during their intended life span, a circuit is activated causing the mines to self-destruct. A percentage of the mines in each projectile has an antistrike mechanism to discourage attempts at mine field clearing.

Difference Between Models:

The arming time of the mines in Projectile M718A1 is "INSTANTANEOUS" after impact. This achieves the capability of using the mines tactically in combat operations. The arming time of the mines in Projectile M718 Carriers is 58 seconds nominal. Deployment is for the laying of mine fields for denying access to critical areas. These projectiles will not be resupplied when current assets are no longer available.

Tabulated Data:**Projectile:**

Type Antitank (AT)
 Weight.....103 lb with fuze
 Length (with lifting
 plug)33.9 in.
 Body materialForged steel
 ColorOlive drab with yel-
 low markings
 Marking drawing9277852 (M718)
11786215
(M718A1)

Filler and Weight:

Number of mines.....9
 ExplosivePBX 0280 (95%
RDX, 5% Estane)
 Explosive weight/mine.....1.26 lb
 Expulsion charge.....M10 propellant
(58.0 ± 1 gr)

Mines:

Air drop time.....8 sec (nominal)
 Antidisturbance
 mixture2 mines (randomly
positioned in each
projectile)

Self-destruct time48 hr (nominal)

Components:

Propelling charges.....M3A1, M4A2,
M119, M119A1,
M119A2
 Primers.....MK2A4, M82
 Fuze MTSQ, M577

Temperature Limits:

Firing:
 Upper limit-25°F (-32C)
 Lower limit+145F (+63C)

Storage:
 Lower limit-60°F (-51C)
 Upper limit+160°F (+71°C)
 Packing Data.....This mine is not
available as a sup-
ply item. See sup-
ply catalog, 155mm
Projectile, AT:
M718 and M718A1.

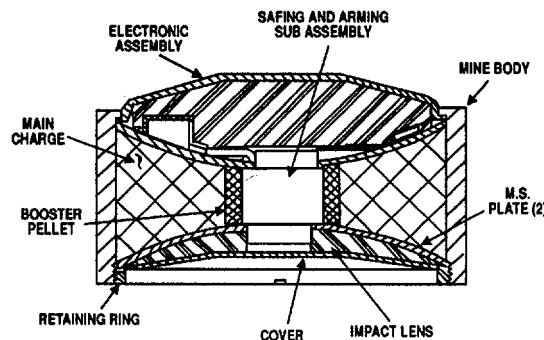
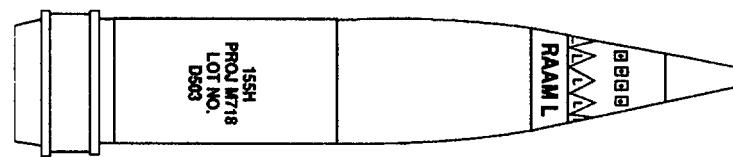
Shipping and Storage Data:

Hazard class/division and
 storage compatibility
 group1.1D
 UNO serial number.....0168
 UNO Proper shipping
 nameProjectiles
 DODAC1320-D503 (M718)
1320-D515
(M718A1)

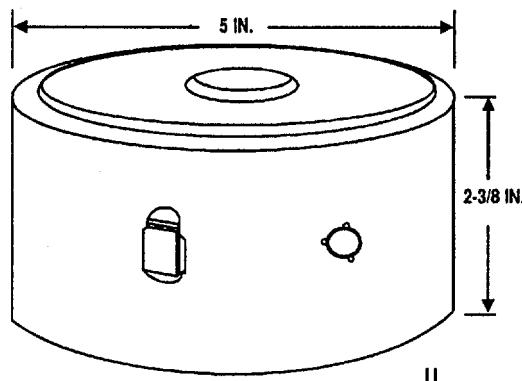
References:

TM 9-1025-200-12
 TM 9-1025-211-10
 TM 9-1300-251-20
 TM 9-1300-251-34
 TM 9-2350-311-10
 TM 9-2350-314-10

PROJECTILE, 155 MILLIMETER: AT, M741 AND M741A1 WITH ANTITANK MINES



U AR 6386



U AR3669

Type Classification:

M741 - Standard, Logistic Control Code A
 M741A1 - Standard, Logistic Control Code A
 MSR 04866010

Use:

These projectiles are used to deliver antitank mines in front of enemy armored forces to deny/delay access to a particular area for a specific time period. The "S" means "Short" for the short time until mine self-destructs (4 hours, nominal).

Description:

The projectiles are of the separate loading type (the fuzes, propelling charges, and primers are handled

separately). The projectiles are shipped from the loading plant with fusible lifting plugs to facilitate handling, and as a safety measure. Before firing, the lifting plugs must be replaced with M577 series, MTSQ fuzes. The projectiles contain a payload of antitank mines that are ejected during projectile flight by an expulsion charge. The rotating bands are protected from damage during transportation and handling by plastic grommets.

Functioning:

When the projectile is fired, the primer ignites the propelling charge which propels the round to the target area. The MTSQ fuze functions at its pre-set time setting, initiating the expulsion charge, which ejects the mines from the projectile. The mines (having been subjected to the required set-back, rotational, and

set-forward forces) are armed immediately or soon after coming to rest on the ground, depending upon projectile model. Upon sensing the proximity of tanks, the mines initiate. If the mines are not initiated during their intended life span, a circuit is activated causing the mines to 'self-destruct. A percentage of the mines in each projectile has an antistrike mechanism to discourage attempts at mine field clearing.

Difference Between Models:

The arming time of the mines in Projectile M741A1 is "INSTANTANEOUS" after impact. This achieves the capability of using the mines tactically in combat operations. The arming time of the mines in Projectile M741 Carriers is 58 seconds nominal. Deployment is for the laying of mine fields for denying access to critical areas. These projectiles will not be resupplied when current assets are no longer available.

Tabulated Data:

Projectile:

Type Antitank (AT)
 Weight 103 lb with fuze
 Length (with lifting
 plug) 33.9 in.
 Body material Forged steel
 Color Olive drab with yel-
 low markings
 Marking drawing 9278014 (M741)
 11786240
 (M741A1)

Filler and Weight:

Number of mines 9
 Explosive PBX 0280 (95%
 RDX, 5% Estane)
 Explosive weight/mine 1.26 lb
 Expulsion charge M10 propellant
 (58.0 + 1 gr)

Mines:

Air drop time 8 sec (nominal)

Antistrike mixture 2 mines (randomly
 positioned in each
 projectile)
 Self-destruct time 4 hr (nominal)
 ("Short" time - SD
 mines)

Components:

Propelling charges M3A1, M4A2,
 M119, M119A1,
 M119A2
 Primers MK2A4, M82
 Fuze MTSQ, M577

Temperature Limits:

Firing:
 Upper limit -25°F (-32°C)
 Lower limit + 145°F (+63°C)

Storage:
 Lower limit -60°F (-51°C)
 Upper limit +160°F (+71°C)

Packing Data This mine is not
 available as a sup-
 ply item. See sup-
 ply catalog, 155mm
 Projectile, AT:
 M741 and M741A1.

Shipping and Storage Data:

Hazard class/division and
 storage compatibility
 group 1.1D
 UNO serial number 0168
 UNO Proper shipping
 name Projectiles
 DODAC 1320-D509 (M741)
 1320-D514
 (M741A1)

References:

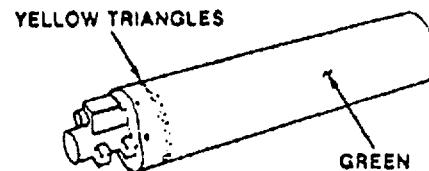
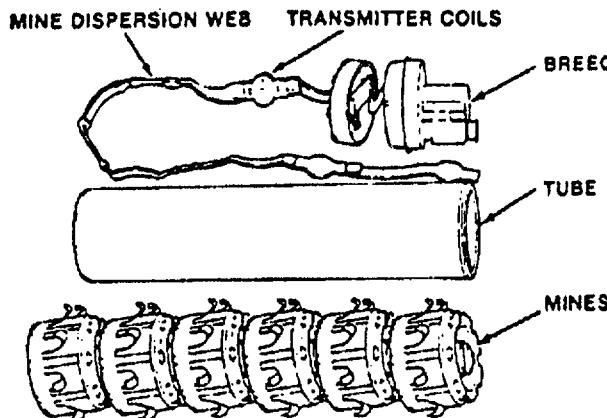
TM 9-1025-200-12
 TM 9-1025-211-10
 TM 9-1300-251-20
 TM 9-1300-251-34
 TM 9-2350-311-10
 TM 9-2350-314-10

CHAPTER 8

MINE CANISTERS

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CANISTER, MINE: M87



U
AR 4335

Type Classification:

Standard Jan. 89

Use:

The M87 mine canister is used with the M139 mine dispenser (VOLCANO) to lay a mine field.

Description:

The M87 mine canister is an expendable item consisting of an aluminum tube and breech assembly containing five antitank mines and one antipersonnel mine. Also housed in the canister are six transmitter coils, attached to a dispersion strap, and a propulsion system. The propulsion system consists of a self-contained electrically initiated primer, and a pressure cartridge assembly containing the launching propellant. The canister is painted in green and has one colored band of yellow triangles near the breech.

Functioning:

When an electrical pulse is received, the electric primer initiates the pressure cartridge expelling a mine stack from the canister. The stack consists of five antitank mines and one anti-personnel mine. An interfaced web provides dispersion, self-destruct, and arm signals, set from the dispenser control unit to the mines.

Tabulated Data:

Canister, Mine: M87:

| | |
|---|---------------------------|
| Length | 24.09 in. |
| Diameter | 5.0 in. |
| Weight (loaded with 5 AT and 1 AP mines) | 13.62 kg (30.0 lb) |
| Color | Forest Green No. 34079 |
| Marking | Yellow, Black |
| Contents: | |
| AT mine..... | 5 |
| AP mine..... | 1 |
| Pressure cartridge..... | 1 |
| Electrical primer..... | 1 |

Explosives:

AT Mine (Each):

| | |
|--|------------------|
| RDX estane | 0.59 kg (1.3 lb) |
| PBXN-5 | 13.6 g (0.03 lb) |
| Lead styphnate..... | 9 mg |
| RD 1333 lead azide | 28 mg |
| Boron borochromate..... | 10 mg |
| HMX | 32 mg |
| M5 propellant | 1.5 g |
| Barium styphnate and KDNBF 50/50 mixture | 5.2 mg |

AP Mine (Each):

| | |
|---------------|---------|
| Comp B-4..... | 400.00g |
| Comp A-5..... | 6.28 g |

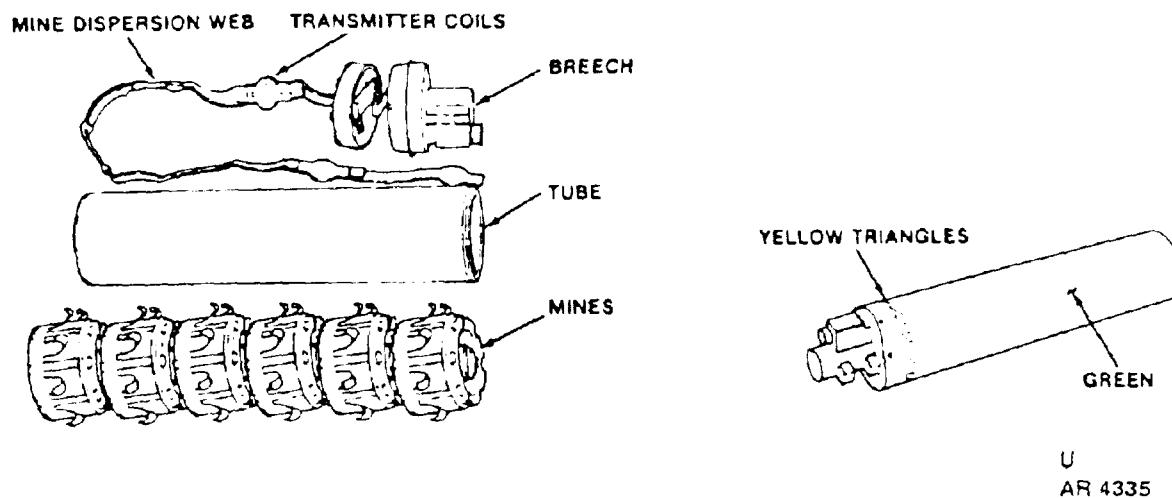
PBXN-5 4.60 g
 Lead styphnate 0.8 mg
 RD 1333 lead azide 14 mg
 HMX 16 mg
 M5 propellant 1.5 g
 Barium styphnate and
 KDNBF 50/50
 mixture 5.2 mg
 Pressure Cartridge:
 Propellant M1 type I 4.8 g
 Propellant, black
 powder 1.0 g
 Lead styphnate 62 mg
 Electric Primer:
 Boron potassium
 perchlorate 10 mg
 Titanium potassium
 perchlorate 25 mg
 Mine Canister (Each):
 RDX estane 2.95 kg (6.5 lb)
 PBXN-5 72.60 g (0.16 lb)
 Comp B-4 400.00 g
 Comp A-5 6.28 g
 Lead styphnate 108 mg
 Boron borochromate 50 mg
 HMX 176 mg
 M5 propellant 9 g
 Barium styphnate and
 KDNBF 50/50
 mixture 31 mg
 Propellant M1 type I 4.8 g
 Propellant, black
 powder 1.0 mg
 Boron potassium
 perchlorate 10 mg
 Titanium potassium
 perchlorate 25 mg
 RD 1333 Lead azide 154 mg
 Temperature Limits:
 Operational:
 Minimum -37°C (-35°F)
 Maximum +63°C (+145°F)

Storage:
 Minimum -53°C (-650F)
 Maximum +71°C (+160F)
 Shipping and Storage Container:
 (Metal Tube Type):
 Length 149.86 cm (59.0 in.)
 Diameter 17.27 in. (6.8 in.)
 Weight (empty) 11.34 kg (25.0 lb)
 Weight (packed with 2
 mine canisters) 39.95 kg (88.0 lb)
 Palletization (Metal Pallet):
 Pallet size 71.8 x 149.9 cm
 (28-1/4 x 59.0 in.)
 Pallet weight (empty) 63.5 kg (140. lb)
 Pallet configuration
 (tubes) 4 across x 5 high =
 20 tubes
 Pallet height 99.1 cm (39.0 in.)
 Pallet cube 1.07 cu m
 (37.6 cu ft)
 Pallet weight (loaded) 852.6 kg
 (1,900.0 lb)
 Shipping and Storage Data:
 DOD hazard class 1.1
 DOD compatibility
 group D
 DOD hazard class Class A Explosive
 DOT container marking EXPLOSIVE
 MINES
 US Coast Guard
 Classification X-A
 Shelf life Indefinite
 DODAC 1345-K045
 NSN 1345-01-233-2029
 UNO serial number UN0137
 UNO Proper shipping
 name Mines

References:

TM 9-1095-208-10
 TM 9-1345-203-12&P
 TM 9-1345-203-34&P

CANISTER, MINE: M87A1

Type Classification:

Standard.

Use:

The M87A1 mine canister is used with the M139 mine dispenser (VOLCANO) to lay a mine field.

Description:

The M87A1 mine canister is an expendable item consisting of an aluminum tube and breech assembly containing six antitank mines. Also, the canister contains six transmitter coils, attached to a dispersion strap, and a propulsion system. The propulsion system consists of a self-contained electrically initiated primer, and a pressure cartridge assembly containing the launching propellant. The canister is painted in green and has one colored bank of yellow triangles near the breech.

Functioning:

When an electrical pulse is received, the electric primer initiates the pressure cartridge expelling a mine stack from the canister. The stack consists of five antitank mines and one antipersonnel mine. An interfaced web provides dispersion, self-destruct and arm signals, set from the dispenser control unit to the mines.

Tabulated Data:

Canister, Mine: M87A1:

| | |
|---------------------------------------|-----------------------|
| Length..... | 24.09 in. |
| Diameter..... | 5.0 in. |
| Weight (loaded with 6 AT mines) | 13.62 kg (30.0 lb) |
| Color..... | Forest Green |
| Marking..... | Yellow, Black |
| Contents: | |
| AT mine..... | 6 |
| Pressure cartridge..... | 1 |
| Electrical primer..... | 1 |

Explosives:

AT Mine (Each):

| | |
|---|------------------|
| RDX estane..... | 0.59 kg (1.3 lb) |
| PBXN-5..... | 13.6 g (0.03 lb) |
| Lead styphnate | 9 mg |
| RD 1333 lead azide..... | 28 mg |
| Boron borochromate | 13 mg |
| HMX | 32 mg |
| M5 propellant..... | 1.5 g |
| Barium styphnate and KDNEBF 50/50 mixture | 5.2 mg |

Pressure Cartridge:

| | |
|--------------------------|-------|
| Propellant M1 type I | 4.8 g |
| Propellant, black powder | 1.0 g |
| Lead styphnate | 62 mg |

Electric Primer:

| | |
|--------------------------------|-------|
| Boron potassium perchlorate | 10 mg |
| Titanium potassium perchlorate | 25 mg |

M87A1 mine canister (Each):

| | |
|--|----------|
| RDX estane | 3.54 kg |
| PBXN-5 | 81.6 g |
| Lead styphnate | 116.0 mg |
| Boron borochromate | 60.0 mg |
| HMX | 192.0 mg |
| M5 propellant | 9.0 g |
| Barium styphnate and KDNBF 50/50 mixture | 31.2 mg |
| Propellant M1, type | 4.8 g |
| Propellant, black powder | 1.0 mg |
| Boron potassium perchlorate | 10.0 mg |
| Titanium potassium perchlorate | 25.0 mg |
| RD 1333 lead azide | 168.0 mg |

Temperature Limits:

Operational:

| | |
|---------|----------------|
| Minimum | -37°C (-35°F) |
| Maximum | +63°C (+145°F) |

Storage:

| | |
|---------|----------------|
| Minimum | -53°C (-65°F) |
| Maximum | +71°C (+160°F) |

Shipping and Storage Container:

(Metal Tube Type):

| | |
|--------|----------------------|
| Length | 149.86 cm (59.0 in.) |
|--------|----------------------|

| | |
|--|---------------------|
| Diameter | 17.27 in. (6.8 in.) |
| Weight (empty) | 11.34 kg (25.0 lb) |
| Weight (packed with 2 mine containers) | 39.95 kg (88.0 lb) |

Palletization (Metal Pallet):

| | |
|------------------------------|-------------------------------------|
| Pallet size | 71.8 x 149.9 cm (28-1/4 x 59.0 in.) |
| Pallet weight (empty) | 63.5 kg (140. lb) |
| Pallet configuration (tubes) | 4 across x 5 high = 20 tubes |
| Pallet height | 99.1 cm (39.0 in.) |
| Pallet cube | 1.07 cu meter (37.6 cu ft) |
| Pallet weight (loaded) | 852.6 kg (1,900.0 lb) |

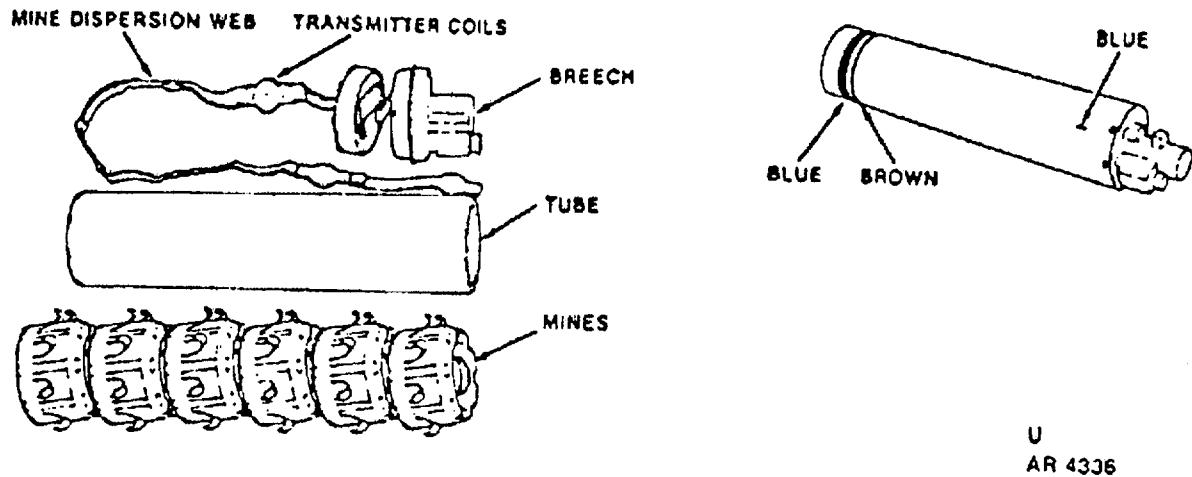
Shipping and Storage Data:

| | |
|-------------------------------|--------------------|
| DOD hazard class | 1.1 |
| DOD compatibility group | D |
| DOD hazard class | Class A Explosive |
| DOT container marking | EXPLOSIVE MINES |
| US Coast Guard Classification | X-A |
| Shelf life | Indefinite |
| DODAC | 1345-J003 |
| NSN | 1345-01-384-3617 |

References:

| |
|----------------------|
| TM 9-1095-208-10-1 |
| TM 9-1095-208-23-1&P |
| TM 9-1345-203-12&P |
| TM 9-1095-208-23-2&P |

CANISTER, MINE, PRACTICE: M88

Type Classification:

Standard Jan. 89

Use:

The M88 practice mine canister is used with the M139 mine dispenser (VOLCANO) in field training in the handling and operation of the M88 mine canister and M139 mine dispenser.

Description:

The M88 mine canister is an expendable item consisting of an aluminum tube and breech assembly containing six dummy mines. Also housed in the canister are a dispersion strap, and a propulsion system. The propulsion system consists of a self-contained electrically initiated primer, and a pressure cartridge assembly containing the launching propellant. The canister is painted in light blue and has one brown and one blue color band near the muzzle. The end cap has a brown ring around a blue center dot.

Functioning:

When an electrical pulse is received, the electric primer initiates the pressure cartridge expelling a mine stack from the canister. The stack consists of six dummy mines.

Tabulated Data:

| | |
|---|--------------------|
| Canister, | Mine: M88: |
| Length | 24.09 in. |
| Diameter | 5.0 in. |
| Weight (loaded with 6 dummy mines)..... | 13.62 kg (30.0 lb) |
| Color Blue No. 35109 | |
| Marking Blue, Brown, Black | |
| Dummy mine | 6 |
| Pressure cartridge | 1 |
| Electrical primer | 1 |

Explosives:

| | |
|--------------------------------------|--------|
| Pressure Cartridge: | |
| Propellant M1 type I | 4.8 g |
| Propellant, black powder | 1.0 g |
| Lead styphnate..... | 62 mg |
| Electric Primer: | |
| Boron potassium perchlorate | 10 mg |
| Titanium potassium perchlorate | 25 mg |
| Mine Canister (Each): | |
| Lead styphnate | 62 mg |
| Propellant M1 type 1..... | 4.8 g |
| Propellant, black powder..... | 1.0 mg |
| Boron potassium perchlorate | 10 mg |
| Titanium potassium perchlorate | 25 mg |

Temperature Limits:

Operational:

Minimum-37°C (-35°F)
 Maximum+63°C (+145°F)

Storage:

Minimum-53°C (-65°F)
 Maximum+71°C (+160°F)

Shipping and Storage Container:

(Metal Tube Type):

Length49.86 cm (59.0 in.)
 Diameter17.27 in. (6.8 in.)
 Weight (empty).....11.34 kg (25.0 lb)
 Weight (packed with 2
 mine canisters)39.95 kg (88.0 lb)

Palletization (Metal Pallet):

Pallet size.....71.8 x 149.9 cm
(28-1/4 x 59.0 in.)
 Pallet weight (empty).....63.5 kg (140. lb)
 Pallet configuration
 (tubes)4 across x 5 high =
20 tubes
 Pallet height99.1 cm (39.0 in.)
 Pallet cube.....1.07 cu meter
(37.6 cu ft)

Pallet weight (loaded).....852.6 kg
(1,900.0 lb)

Shipping and Storage Data:

DOD hazard class1.2
 DOD compatibility
 groupC
 DOD hazard classClass C Explosive
 DOT container markingCARTRIDGE
PRACTICE
AMMUNITION

US Coast Guard

ClassificationX-A
 Shelf life.....Indefinite
 DODAC1345-K042
 UNO serial number.....0276
 UNO Proper shipping
 nameCartridges, power
 device
 NSN1345-01-233-2030

References:

TM 9-1095-208-10
 TM 9-1345-203-12&P
 TM 9-1345-203-34&P

CHAPTER 9

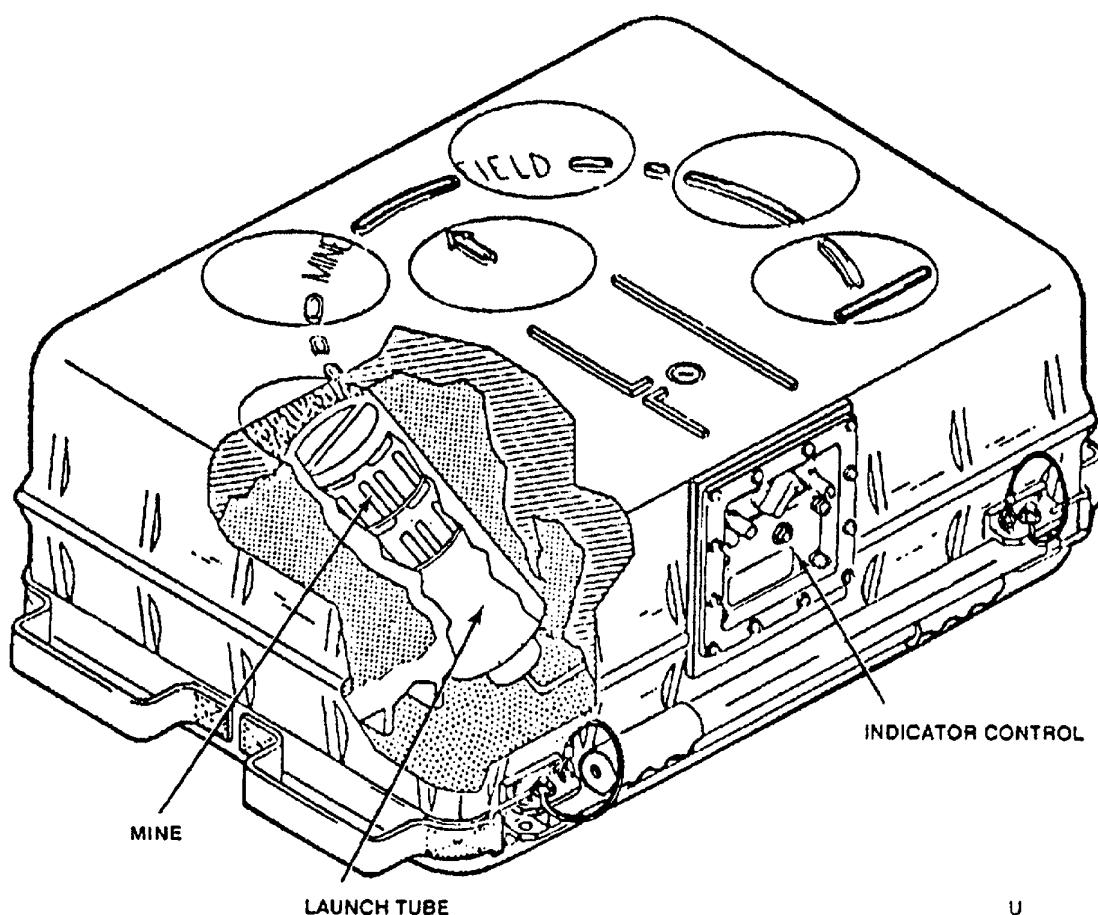
DISPENSER AND MINES

9-1

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9-2

DISPENSER AND MINES, GROUND: M131



U
AR 4515

Type Classification:

STD-LCC-A (6-20-86)

Use:

The M131 Mine Dispenser is used with the M71 Remote Control Unit (RCU) or Blasting Machine to deploy small antitank and antipersonnel minefields.

Description:

The M131 Mine Dispenser is a man portable, remotely controlled, antipersonnel (AP) and antitank/antivehicle (AT/AV) mine dispensing system. The mines may be deployed on command by a blasting machine hardwired to dispenser or by operating a radio frequency (RF) Remote Control Unit (RCU). The dispenser contains a battery powered Indicator Control (IC) and seven launch tubes. Each tube houses three

mines for a total of twenty-one mines per dispenser (17 AT/AV and 4 AP mines). The IC is powered by a lithium cell battery and contains the electronic package which receives, interprets, and acts on the signals received. The dispenser is designed as a self-contained shipping, storage, and deployment unit that is not reloadable once the mines have been deployed. The mine dispenser, which weighs approximately 160 pounds, is easily emplaced by four persons.

Functioning:

The Indicator Control in the dispenser receives command and control data from the M71 RCU when the magnetic coupling devices of the RCU and dispenser are mated together. If no data is transferred to dispenser, there will be no command and control capability once the mines are deployed. After dispenser is set to arm for 5 minutes, mines can be deployed via the M71 RCU or by a blasting machine hardware connecting to the Indicator Control.

When the Indicator Control receives the deploy command, it will send signals to the mine Electronic Battery Initiator (EBI) to activate the mine batteries. The Indicator Control then sends control data to mines and activates actuators in dispenser to detonate cartridges to launch mines.

Tabulated Data:

a. Dispenser and Mines, Ground: M131:

ColorOlive drab
MarkingWhite
Length81.8 cm
Width57.6 cm
Height34.5 cm
Cube0.137 cu m
Weight (without battery)68.1 kg (loaded)
Number of tube dispensers7
Number of mines per tube3
Total number of mines21 (4 AP, 17 AT)
Ejection charge12 gage cartridge (electrically detonated)
Total explosive weight11.98 kg

Explosives:
Comp B-41.64 kg
RDX Estane10.03 kg
PBXN-5258.58 g
Comp A-525.12 g
Lead styphnate21.4 mg
M5 propellant31.5 g
RD 1333 lead azide73.0 mg
HMX336.0 mg
Boron borochromate170.0 mg
Barium styphnate and KDNBF 50/50 mixture - 109.2 mg
Barium nitrate483.0 mg
Lead azide378.0 mg
Center lead4.18 mg

Material:
OuterHigh density rubber filled poly-ethylene
InnerRigid structural foam plastic liner
TubesAluminum
DODAC1345-K022
UNO serial number0137
UNO Proper shipping nameMines
NSN1345-01-160-8909

Temperature Limits:

Operation:

Minimum-40°C (-40°F)
Maximum+600C (+1400F)

Storage:

Minimum-570C (-700F)
Maximum+710C (+1600F)

Power Requirements:

Voltage11-15 Vdc
Current7.4 to 8.2 ma

Power source:

Battery, Primary Lithium Organic, BA-5598/U: Rating 10 to 15 volts dc, weight about 1.5 lb

Pallet Configuration:

Pallet size86.4 cm x 132.1 cm (34 in. x 52 in.)
Pallet weight (including cover and supports)63.5 kg
Pallet w/6 M131
Dispensers472.1 kg
Height - 1 Pallet w/6 dispensers (3 high)1.22 m (48 in.)
Cube - 1 Pallet w/6 dispensers (3 high)1.39 cu m (49.1 cu ft)

Shipping and Storage Data:

DOD hazard class1.1
Storage compatibility groupD
Quantity-distance class1.1D
DOT shipping classA
DOT markingEXPLOSIVE MINES
US Coast Guard ClassX-A
Air Transport Loading/ Storage Group (TM 38-250)6
Shelf life20 yr

b. Antipersonnel Mine:

ColorForest green
Height6.60 cm
Diameter12.07 cm
Total weight1.54 kg
Total explosive weight0.42 kg
Explosives:
Main charge, Comp B-40.41 kg
Booster, Comp A-5 (4 ea)6.28 g (total)
Explosive lead, PBXN-5 (4 ea)4.0 g (total)
Main charge leads, PBXN-5 (4 ea)360.0 mg (total)

M100 Detonator:
Lead styphnate0.8 mg
RD 1333 lead azide14.0 mg
HMX16.0 mg

Transfer lead, PBXN-5-73.0 mg

MDF assembly, PBXN-5

(2 cords, 4 end caps)160.0 mg

Cleaning charge M5

Propellant (2 ea)1.5 g (total)

Micro piston actuator-

barium styphnate and

KDNBF 50/50

mixture5.2 mg

Battery Primer:

Barium nitrate23.0 mg

Lead styphnate0.8 mg

Lead azide18.0 mg

c. Antitank Mine:

| | | |
|--------------------------------------|--------------|---------------------------------------|
| Color | Forest green | Transfer lead, PBXN-5- 86.0 mg |
| Height..... | 6.60 cm | MDF assembly, |
| Diameter | 12.07 cm | PBXN-5 84.0 mg |
| Total weight..... | 1.86 kg | Cleaning charge M5 |
| Total explosive weight..... | 0.60 kg | propellant (2 ea) 1.5 g (total) |
| Explosives: | | Micro piston actuator - |
| Main charge, RDX | | barium styphnate |
| ESTANE 0.59 kg | | and KDNBF 50/50 |
| Booster ring, PBXN-5 | | mixture 5.2 mg |
| (4 ea)..... 13.6 g | | Battery Primer: |
| Main charge leads, | | Barium nitrate 23.0 mg |
| PBXN-5 (4 ea) 360.0 mg (total) | | Lead styphnate 0.8 mg |
| Center lead..... 246.0 mg | | Lead azide 18.0 mg |
| Delay Detonator: | | |
| Lead styphnate 0.08 mg | | |
| RD 1333 lead azide 1.0 mg | | |
| Boron borochromate 10.0 mg | | |
| HMX 16.0 mg | | |

References:

TM 9-1345-209-10
TM 9-1345-209-23&P

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By Order of the Secretary of the Army:

Official



MILTON H. HAMILTON

*Administrative Assistant to the
Secretary of the Army*

07496

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
 1 decimeter = 10 centimeters = 3.94 inches
 1 meter = 10 decimeters = 39.37 inches
 1 dekameter = 10 meters = 32.8 feet
 1 hectometer = 10 dekameters = 328.08 feet
 1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
 1 decigram = 10 centigrams = 1.54 grains
 1 gram = 10 decigram = .035 ounce
 1 decagram = 10 grams = .35 ounce
 1 hectogram = 10 decagrams = 3.52 ounces
 1 kilogram = 10 hectograms = 2.2 pounds
 1 quintal = 100 kilograms = 220.46 pounds
 1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
 1 deciliter = 10 centiliters = 3.38 fl. ounces
 1 liter = 10 deciliters = 33.81 fl. ounces
 1 dekaliter = 10 liters = 2.64 gallons
 1 hectoliter = 10 dekaliters = 26.42 gallons
 1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

| To change | To | Multiply by | To change | To | Multiply by |
|---------------|--------------------|-------------|--------------------|---------------|-------------|
| inches | centimeters | 2.540 | ounce-inches | Newton-meters | .007062 |
| feet | meters | .305 | centimeters | inches | .394 |
| yards | meters | .914 | meters | feet | 3.280 |
| miles | kilometers | 1.609 | meters | yards | 1.094 |
| square inches | square centimeters | 6.451 | kilometers | miles | .621 |
| square feet | square meters | .093 | square centimeters | square inches | .155 |
| square yards | square meters | .836 | square meters | square feet | 10.764 |
| square miles | square kilometers | 2.590 | square meters | square yards | 1.196 |
| acres | square hectometers | .405 | square kilometers | square miles | .386 |
| cubic feet | cubic meters | .028 | square hectometers | acres | 2.471 |
| cubic yards | cubic meters | .765 | cubic meters | cubic feet | 35.315 |
| fluid ounces | milliliters | 29.573 | cubic meters | cubic yards | 1.308 |
| pints | liters | .473 | milliliters | fluid ounces | .034 |
| quarts | liters | .946 | liters | pints | 2.113 |
| gallons | liters | 3.785 | liters | quarts | 1.057 |
| ounces | grams | 28.349 | liters | gallons | .264 |
| pounds | kilograms | .454 | grams | ounces | .035 |
| short tons | metric tons | .907 | kilograms | pounds | 2.205 |
| pound-feet | Newton-meters | 1.356 | metric tons | short tons | 1.102 |
| pound-inches | Newton-meters | .11296 | | | |

Temperature (Exact)

| °F | Fahrenheit temperature | 5/9 (after subtracting 32) | Celsius temperature | °C |
|----|------------------------|----------------------------|---------------------|----|
|----|------------------------|----------------------------|---------------------|----|

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